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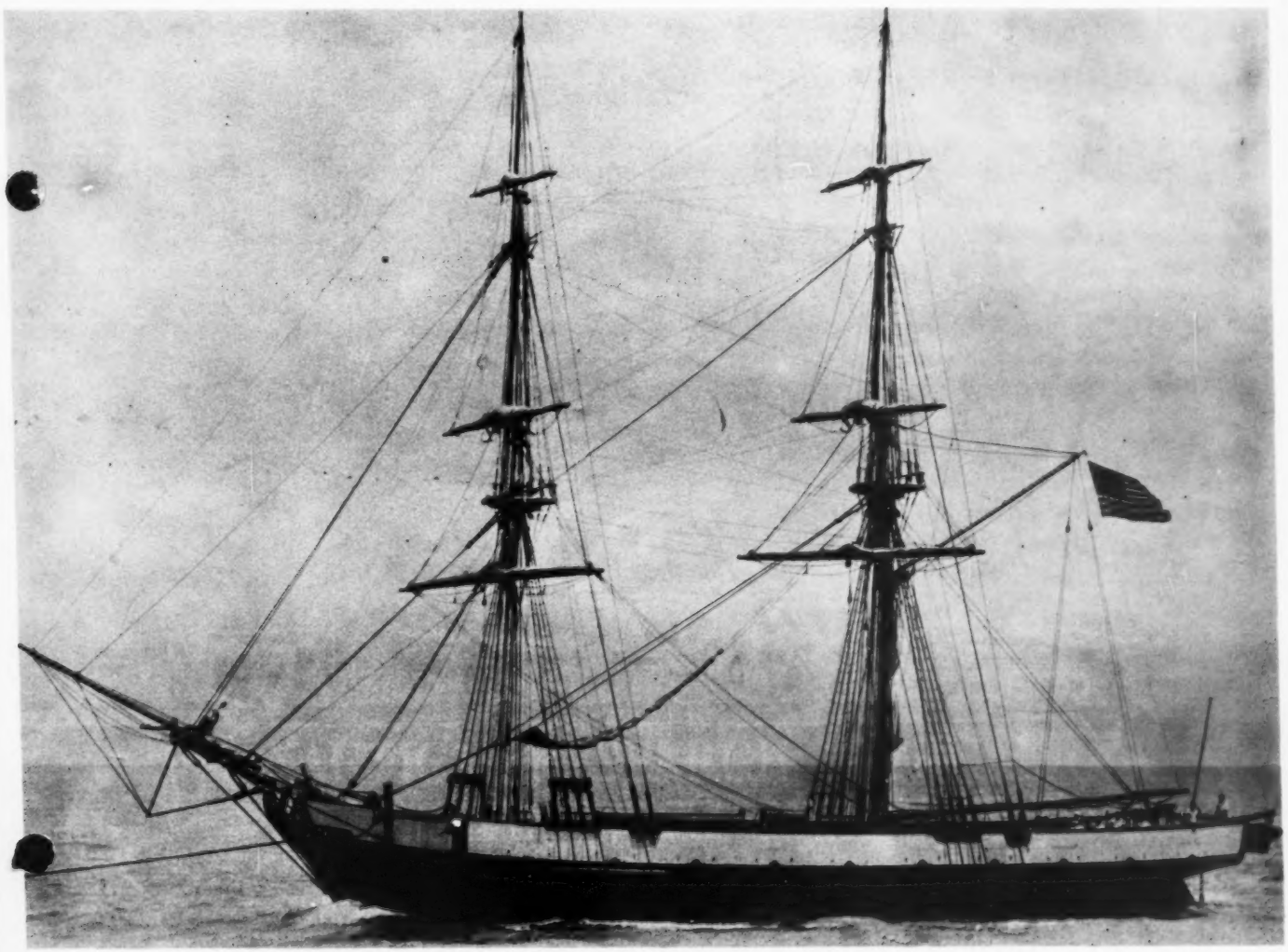


The restored NIAGARA, under tow of the WOLVERINE
Lake Michigan, 1913

THE SHIPS OF PERRY'S FLEET

by

L. W. Richardson

I BUILDING THE SHIPS

The Battle of Lake Erie, fought near Put-In-Bay in 1813 by an American fleet under the command of Master Commandant Oliver H. Perry, and a British squadron led by Captain R. H. Barclay, was possibly the most improtant naval engagement of the War of 1812. The details of the battle, the tremendous impact of Perry's victory on American morale and the further progress of the war are facts too well known to justify the review.

Not so well known is the story of the construction of the ships in Perry's fleet. This follows the familiar pattern of a "crash" program in time of war, in face of eminent enemy forces and with critical shortages of men and materials.

It began when Captain Daniel Dobbin's merchant schooner SALINA was captured by the British at Mackinac. The angry Dobbins headed for Washington and earned the dubious distinction of being the first to report Hull's surrender at Detroit and the complete collapse of American military and naval might on the upper lakes.

As a result of conferences with Civil and Naval officials, Dobbins was commissioned Sailing Master in the Navy and directed to return to his home town of Erie and there to build a fleet of four schooner rigged gun boats. As he returned, Sailing Master Dobbins engaged one Ebenezer Crosby, a skilled Lake Erie shipwright, to take charge of the actual building of the vessels.

Stern of the old NIAGARA just after raising,
Erie, Pennsylvania, 1913

Erie was then a small village of 400, many of whom were sailors or wagoners engaged in the salt trade. It possessed two advantages; it was the only naturally safe harbor on the lake and there was an abundance of timber in the surrounding forests. Manufacturing facilities did not exist and communication, other than by the lake, was slow and difficult. Most of the wagon roads were passable only a few months of the year.

Dobbins and Crosby, with only local help, started construction of the gunboats in September, 1812. So little material was available that steel for axes had to be brought in from Meadville. The design of the vessels must have been Crosby's, with Dobbins contributing a sailor's advice. A report from Dobbins to Lt. Angus at Black Rock says "I would have sent you a draft but Mr. Crosby has been so busy he has had no time to draw them." As winter closed in, Dobbins scoured the countryside for supplies. Food was scarce but the most pressing problem was the lack of iron and oakum. The middle of December saw two vessels, the "PORCUPINE" and the "TIGRESS", on the stocks, one timbered and the other in frames.

The new year brought Commodore Isaac Chauncey, commander of all naval forces on the upper lakes, on a tour of inspection. With him was his chief constructor, Henry Eckford. Eckford is often credited with the design of the vessels built at Erie, but his influence must have been limited to verbal suggestions or a hasty sketch as he and Chauncey were in Erie only two days and neither returned. The commodore decided that the vessels under construction were too small to be of much value and ordered changes in the dimensions of the second pair. He also ordered the construction of a twenty gun brig, this later being increased to two. He then left for Washington and New York to expedite the flow of men and materials to Erie. In New York he engaged Noah Brown to superintend the Erie yard and bring the project to a speedy conclusion.

Noah and Adam Brown were experienced shipbuilders. For some years they had operated a yard in New York and had built and repaired numerous ships for both the Navy and private owners. Noah Brown arrived in Erie with a small gang of carpenters early in March and took charge at once. He built barracks for the men yet to arrive, a blockhouse, guardhouse and other appurtenances of a frontier navy yard. His arrival left Dobbins free to act as general organizer and expediter. At this point Crosby drops from sight and his further history is unknown.

Early in March the keels for the brigs were laid and the gunboats were nearly completed. Small groups of carpenters, caulkers, blacksmiths and other shipyard workers filtered in from Pittsburg, New York and Sacketts Harbor, until the arrival of a crew of riggers and sailmakers in late March gave Brown a force of nearly 200 men. In addition, there were perhaps a hundred local wagoners and timber fallers at work.

On March 27th Perry arrived to take command. Within two days he was off to Pittsburg to assist in the procurement of needed material. Iron had been a problem all winter. One load of spike rod had been received from Buffalo, another from Bellefonte, but the total was far short of the more than thirty tons needed to finish the six vessels. In February, two British vessels had been sighted several miles off shore, frozen in the ice and abandoned. Work parties salvaged considerable iron work, cordage and supplies and burned the ships. One was Dobbins' old command, the "SALINA."

By the middle of April, the two brigs were in frame and the supply situation began to ease. Iron and cordage had been ordered from Pittsburg. Spring brought higher water in the streams and supplies from Pittsburg and the east were loaded in keel boats and worked up the Allegheny and French creek to Waterford. Fourteen miles by wagon completed the trip to Erie. Canvas had been ordered from Philadelphia and reached the lake via Pittsburg and the keel boat route. Oakum continued in demand and the short supply was augmented by the use of tea lead. Most of the oakum that did reach Erie came from Black Rock.

In January, Chauncey had ordered 32 guns to Black Rock to arm the fleet. Dobbins made heroic efforts to bring these cannon overland in April but the condition of the roads would not permit. Only after the British were driven out of Ft. Erie and the Niagara River made safe to use did these guns reach Erie. Thirty carronades were sent by wagon from the Foxall foundry in Georgetown to Pittsburg. Most of the required shot were cast in Pittsburg, whose foundries also supplied the anchors.

On May 24th an attempt was made to launch one of the brigs but she struck a balk of timber and stalled on the ways. It was June 6th before both ships were in the water.

Shortly before Dobbins had received his commission and instructions to build a fleet at Erie, Master Commandant Jesse D. Elliott had recommended to Chauncey that Black Rock was the only suitable place for the building of the Lake Erie fleet. Chauncey, then ignorant of the decision made in Washington, had accepted the plan and ordered that the vessels tied up at Black Rock be armed and converted for fleet use. These were four merchant ships and one prize, the "CALEDONIA", cut out in a raid by Elliott on Ft. Erie in October, 1812. It had been impossible to move the ship up the river while the British were in Ft. Erie but General Dearborn's forces took Fts. George and Erie late in May and the river was open. Assisted by numerous teams of oxen, the "horned breeze", and two hundred soldiers, the ships were pulled up the river and with Perry in command, sailed for Erie. Thanks to a providential fog, Perry evaded Barclay's blockading squadron and brought the Black Rock ships into Erie on June 19th.

Elliott had recommended Black Rock instead of Erie as a suitable construction site because the harbor at Erie was guarded by a bar that limited the channel depth to 6 feet. Well aware of this obstruction, Barclay's squadron had blockaded the mouth of the harbor since the last of June. On July 31st he sailed for Canada, an act he found difficult to explain later.

The fleet was free to escape to the open lake but the brigs could not get over the bar. By this time the lake had fallen and there was only a little over four feet of water in the channel.

Here, again, Brown justified the responsibility entrusted him. Foreseeing this trouble he had built two camels, an old Dutch trick - two great wooden boxes built to fit the sides of the brigs. The vessels were lightened of everything movable; gear, guns and supplies, the camels lashed alongside and filled with water. Strong timbers were run through the gunports and cribbed up on the camels. The water was then pumped out, the vessels lifted and warped across the bar, the "LAWRENCE" first. It was a tremendous undertaking and shipyard workers, sailors and militia worked without rest until the brigs were over the bar and rearmed. On August 6, 1813, the entire fleet was in the lake and ready for action.

II SHIP DATA

AMELIA (ex "GEN. WILKESON") - Schooner - 62 tons - Built at Detroit - Armed at Black Rock - Condemned as unseaworthy and sunk in the harbor at Erie before the battle.

OHIO - Sailing Master Daniel Dobbins - Schooner - 62 tons - 1 long 32 lb. pivot gun - Built at Cleveland in 1810, sold to the Navy in 1812 - Armed at Black Rock - Acted as supply ship for the fleet and was anchored at Erie on the day of the battle - Anchored for the night off Ft. Erie, boarded and captured by the British in August, 1814 - Scuttled in the Niagara River after the war.

TRIPPE (ex "CONTRACTOR") - Lt. Thomas Holdup - Sloop - 60 tons - 1 long 24 - Built at Black Rock in 1803 - Sold to the Navy in 1812 - Armed at Black Rock - Burned by the British at Buffalo in December, 1813.

SOMERS (ex "CATHERINE") - Sailing Master Thomas C. Almy - Schooner - 85 tons - 1 long 24, 1 long 12 - Built at Black Rock - Sold to the Navy in 1812 - With the "OHIO" was captured by the British in August, 1814 - Sunk in the Niagara River after the war.

CALEDONIA - Lt. Daniel Turner - Snow - 180 tons - 2 long 24's, 1 short 32 - Built River Rouge in 1799 for the British North West Co.- Captured at Ft. Erie by Lt.Jesse D. Elliott in August, 1812 - Sold into merchant service and renamed "GEN. WAYNE" after the war - Broken up at Erie.

TIGRESS - Lt. A. H. M. Conkling - Schooner - 60 tons - 1 long 32 lb. pivot gun - Built Lee's Run, Erie in 1813 - Captured by the British near St. Joseph's Island in September, 1814, and renamed "SURPRISE" - Dismantled and sunk, Naval Base, Penetanguishene, Ont. under the terms of the Rush-Bagot Treaty - Raised in recent years and on display at the Naval Museum, Penetanguishene - Only the keel and a few timbers left.

SCORPION - Sailing Master Stephen Champlin - Schooner - 60 tons - 1 long 32, 1 long 24 - Built Lee's Run, Erie in 1813 - Captured with the "TIGRESS" in 1814 and renamed "CONFIANCE" - Sunk with the "TIGRESS" at Penetanguishene - The ships bell from either the "TIGRESS" or the "SCORPION" hangs in the steeple of the garrison church, St. James-on-the-lines, at that port.

PORCUPINE - Midshipman George Senat - Schooner - 60 tons - 1 long 32 lb. pivot gun, 1 long 24 - Built at Lee's Run, Erie in 1813 - In use by the International Boundary Commission 1817-18 under Capt. Stephen Champlin - Sold and rebuilt, Detroit 1830 and renamed "CAROLINE" - Sunk in Spring Lake, Ferrysburg, Mich. in 1847 - Most of her timber cut up and sold as souvenirs at Put-In-Bay during 1913 Centennial - Those left are at Western Reserve Historical Museum, Cleveland.

ARIEL - Lt. John Packett - Pilot boat schooner - 75 tons - 4 long 12's on pivots - Built Cascade Creek, Erie in 1813 - Burned by the British at Buffalo in December, 1813.

LAWRENCE - Commodore O. H. Perry - Brig - 492 tons - 18 32's, 2 long 24's - 110' BP, 29' beam, 9' depth of hold - Built Cascade Creek, Erie in 1813 - Dismantled and sunk for preservation, Misery Bay, Erie In July, 1815. Sold at auction in 1825 - Raised in 1836 but the condition of the hull was such that it was decided impractical to repair and was left in the bay - In the next forty years many of her timbers were removed and cut for souvenirs, hundreds of "LAWRENCE canes" were sold in Erie - In 1876 the remaining skeleton was raised and exhibited at the Philadelphia Centennial- A financial failure, the exhibit was destroyed by fire the same year.

NIAGARA - Master-Commander Jesse D. Elliott - Brig - (Same dimensions, tonnage and armament as the "LAWRENCE") - Built Cascade Creek, Erie in 1813 - Receiving ship at Erie - Dismantled and sunk at Misery Bay, Erie in July, 1818 - Sold at auction in 1825 - Raised and restored in 1913 for the Perry Centennial and towed around the lakes - Returned to Erie.

III RESTORATION OF THE "NIAGARA"

After almost a hundred years on the bottom of Misery Bay, the "NIAGARA" again saw the light of day on April 1, 1913. It had been decided to raise and restore the old ship as a part of the Perry Victory Centennial.

Captain W. L. Morrison, "WOLVERINE" (ex "MICHIGAN") was authorized by the Pennsylvania Centennial Commission to supervise the entire project. When the hull was beached, Captain Morrison reported that the starboard side was eaten away to the turn of the bilge but that the port side was intact to the height of the rail for a distance of nearly 60 feet. Keel, floor timbers, sternpost and most of the stem was sound and could be used in the re-building of the vessel.

Enough of the hull remained for the dimensions and the lines to be taken off by Captain Morrison and Lt. Kessler and these drafts were used in the building of the new "NIAGARA". The spikes for the mast steps were still in the keelson but the arrangement of the deck furniture and the spar dimensions of the original vessel are still unknown.

The old hull presented a curious, warty appearance. Chemical action had hardened the oak planking around the iron spike heads and prevented the sand and water from wearing away the wood. In spite of the serious shortage of iron there were very few tree-nails used in the framing. Iron drift bolts and spikes were used almost exclusively. Nowhere were bolts threaded for plates or nuts. The bulwark eye pins such as those used for gun breeching and train tackles, were slotted outboard and tightened with wedge shaped keys, probably because threading tools were not available or because the bar stock was of many different diameters. A more likely reason was that the timber was green and frequent tightening was required. It would have been easier to tap a key with a maul than to lay overside with a wrench.

The keel was a single balk of black oak 14" x 18" x 100', the keelson 10" x 12". Frames were oak, molded 12", sided 8" and spaced 21-1/2". A curious feature was floor timbers and floor pieces of various kinds of wood; ash, poplar and cucumber, filling the spaces so that the floor was almost a solid mass of timber. All the floor pieces, frames and knees were "compass timbers" - the required arc was the natural bend of the wood. There are advantages in building a ship in a virgin forest.

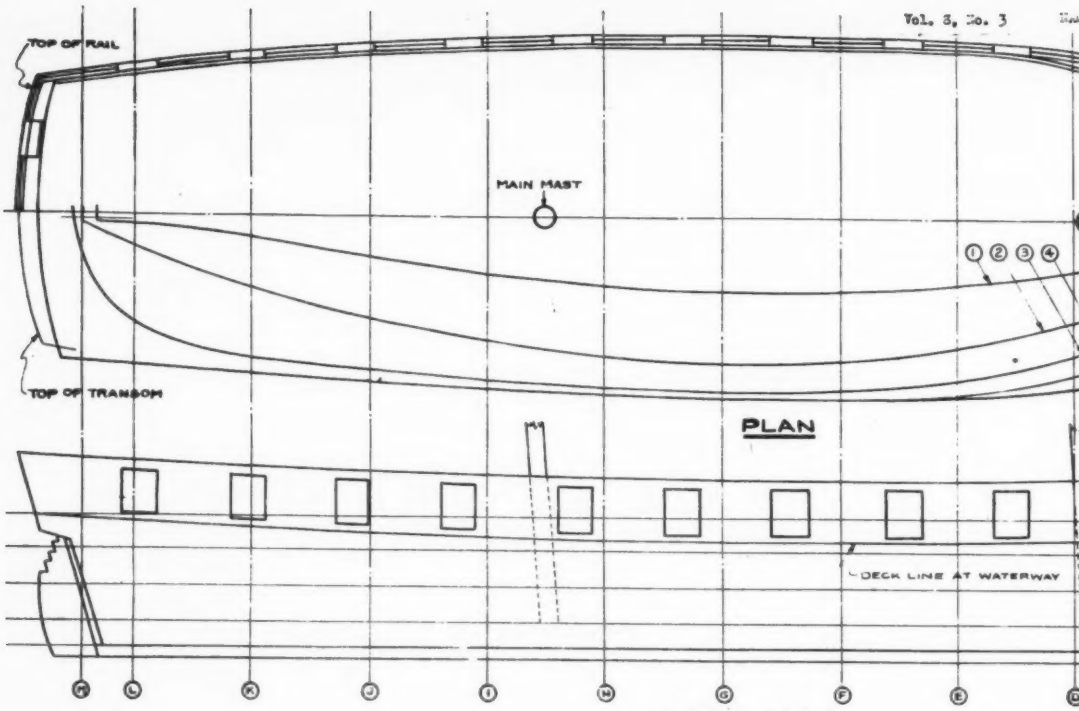
The garboard strake did not follow the keel to the stern, the rabbet left the keel 15' forward of the stern and curved up to meet the sternpost 3' above the keel. The "stealer" or deadwood was a solid piece of timber.

The section of the port bulwark recovered established the size of the gunports as 3' x 3' on 10' centers. Between each and at the level of the gunport sills were 10" x 10" sweep ports. Oakum was used for caulking but the seams had been "payed out" with tea lead. This may have been due to the shortage of oakum but it rather seems to have been a lake practice of the day. This summer (1955) some lead was still to be found in the seams of the "NANCY" which was built (1789) in a period of no particular shortage.

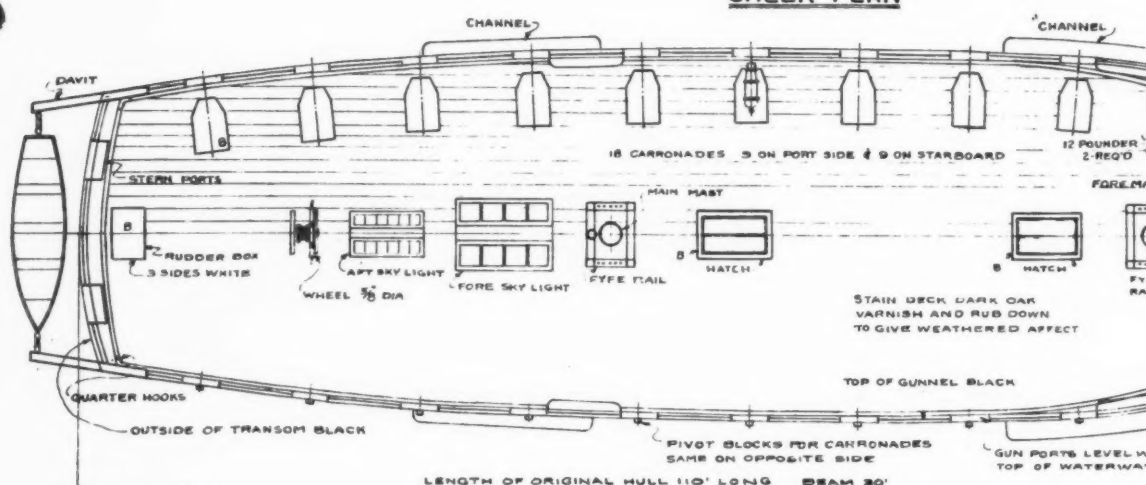
A fact unknown until the re-building began may, at least partly, explain the "NIAGARA'S" poor sailing qualities on the day of the battle. In her building, several drift bolts had been driven through her keel and into a 12' x 12' balk that was possibly a keel block. A hundred years later this was still there, and if it did not affect her sailing, it certainly did not help.

The rebuilding began on April 7, 1913. A study of the lines of the reconstruced hull shows a slightly sharper entrance and a considerably finer run aft than is expected of a lake vessel of the day. From penciled corrections on the working drafts, the finished hull was slightly finer in the fore than the lines would indicate. There was very little sheer and almost no tumblehome. The shallow draft is usually attributed to the undeniable problem facing Brown in getting his finished vessels over the bar. However, it must be remembered that Erie has less water than any of the Great Lakes and in that day few of the channels were known. The problem of sailing over countless reefs and shoals may have been the deciding factor.

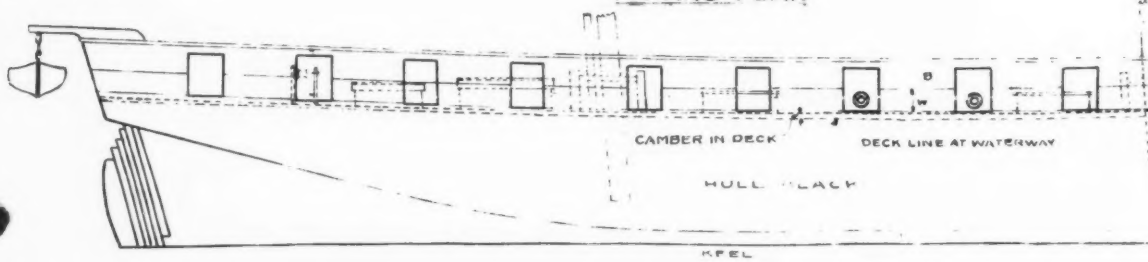
The stem of the reconstruction was a rather elaborate billet headed gammon knee, with cheek knees and trailboards, ornamented with carved leaves. In view of the circumstances surrounding the building, and of the statement attributed to Brown. "We want no extras - plain work is all that is required; they will only be wanted for one battle; if we win, that is all that is wanted of them; if the enemy are victorous the work is good enough to be captured",we think it likely a plain stem was the original design.

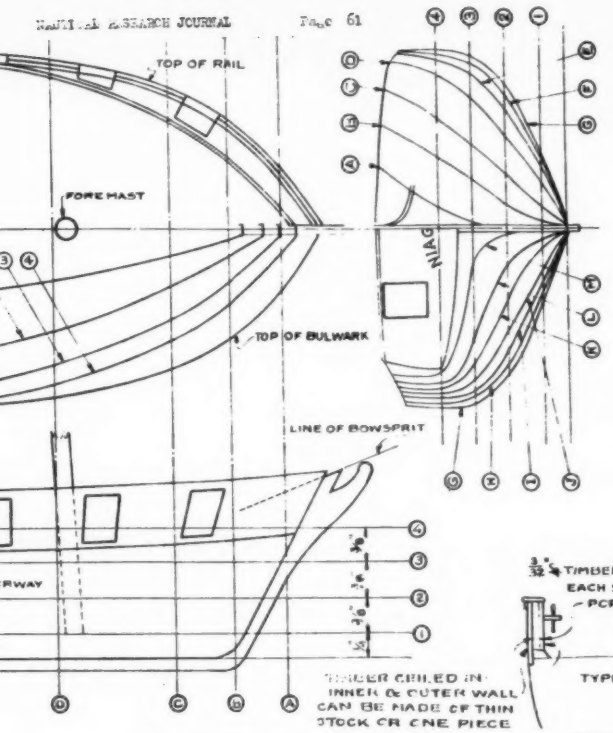


SHEER PLAN



FITTING PLAN





HULL CONTOURS STATIONS A TO M

CONSTRUCTION OF BULWARK

TAKE A PIECE OF ¾" THICK WHITE PINE, AND SHAPE TO THE INSIDE FLARE OF BULWARK AT STATION M. NEXT TAKE A PIECE OF CARD BOARD AND MARK OFF AS IN (FIG 1.) THEN CUT OUT CARD BOARD AND USE AS A TEMPLATE ON 1/16" 3 PLY VENEER (REMEMBER TO CUT 1 LEFT & 1 RIGHT HAND PIECE) CUT VENEER TO SIZE SOAK IN BOILING WATER UNTIL THOROUGHLY PLIABLE THEN CLAMP ON BLOCK UNTIL DRY. SEE (FIG. 2). WHEN COMPLETELY DRY. SAND AND CUT OUT PORTS. AND FIT IN PLACE.

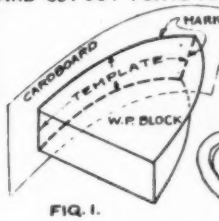


FIG. 1.

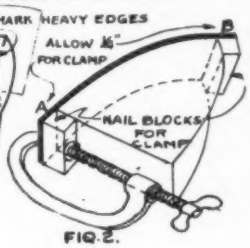
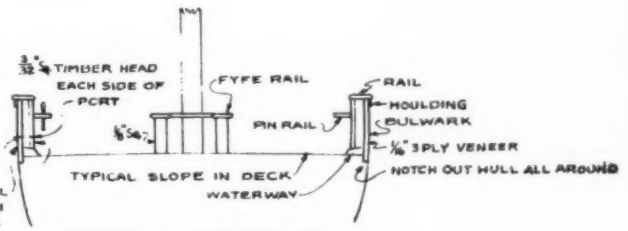


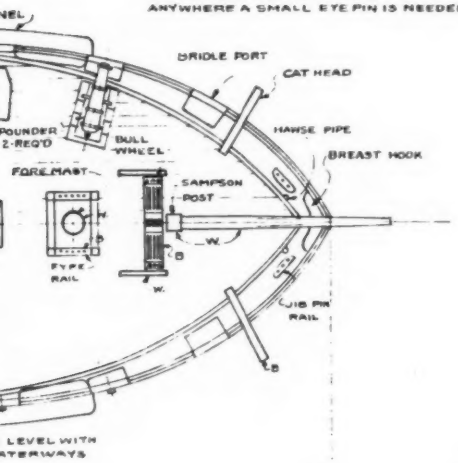
FIG. 2.

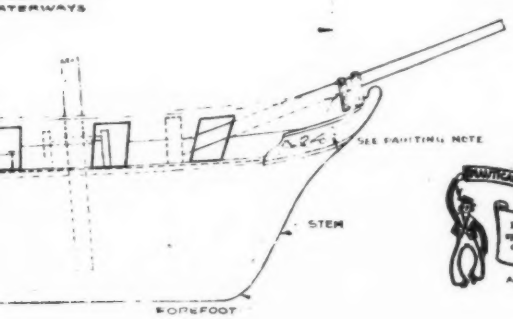
TIMBER CEILED IN INNER & OUTER WALL CAN BE MADE OF THIN STOCK OR ONE PIECE

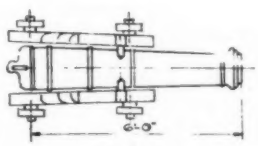
JACK STAY EYE BOLTS CAN BE USED ANYWHERE A SMALL EYE PIN IS NEEDED



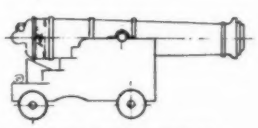
TYPICAL SECTION FORE & MAIN MAST







PLAN

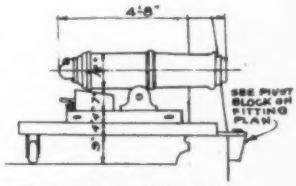


SIDE ELEVATION

⅜" SCALE

TWELVE-POUND GUN USED AS A CHASER ON PERRY'S BRIG "NIAGARA" IN THE BATTLE OF LAKE ERIE IN 1812.

2 REQUIRED



SIDE ELEVATION

⅜" SCALE

THIRTY-TWO POUND CARRONADE

16 REQUIRED

THESE TWO TYPES OF GUNS ARE EXACT REPRODUCTIONS AS THOSE USED ON THE "NIAGARA" THEY ARE SHOWN HERE TO ⅜" SCALE TO SHOW DETAILS:- ACTUAL SIZE ⅛" SCALE

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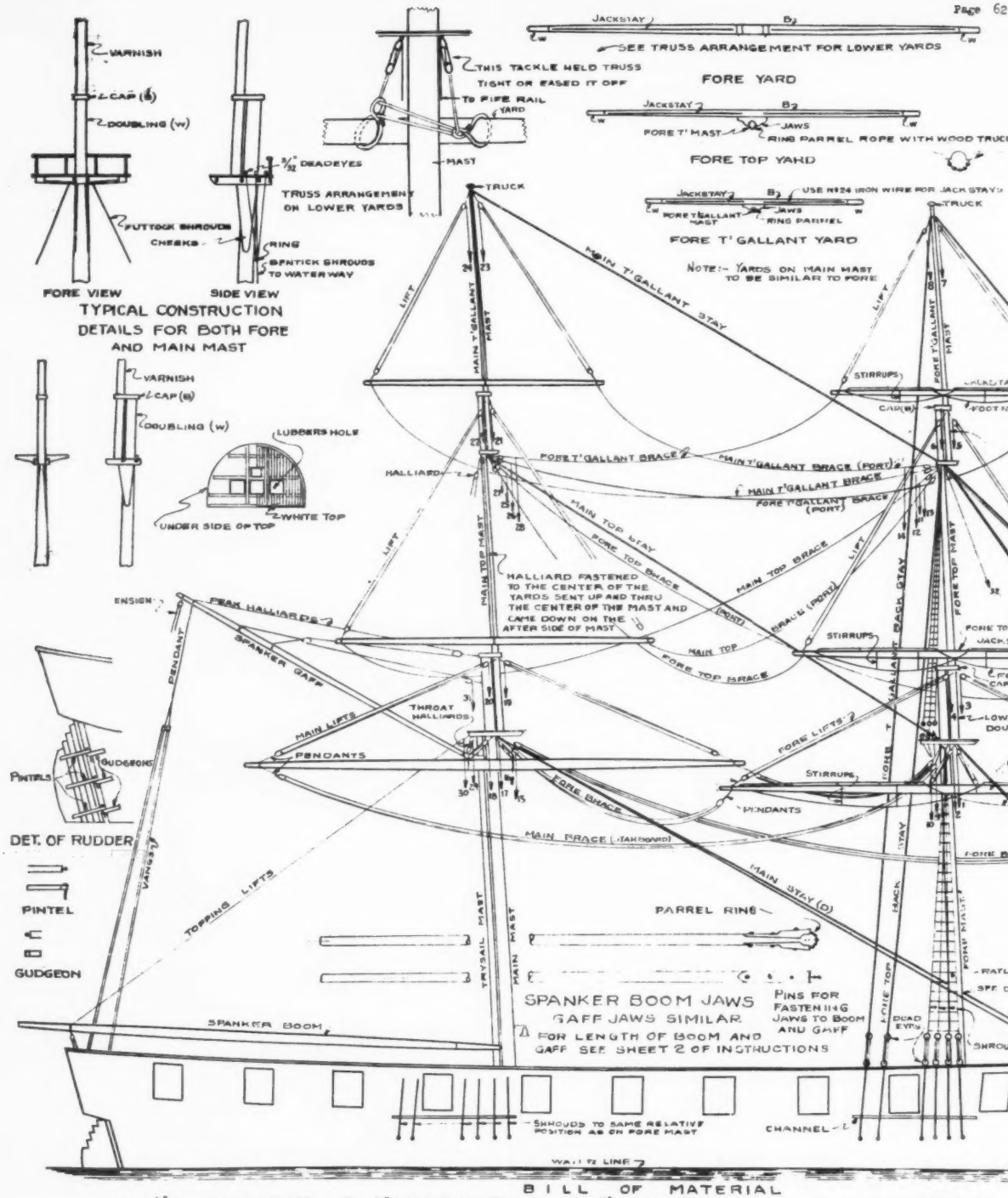
BRIG "NIAGARA" 1812

LENGTH 110' BEAM 30'

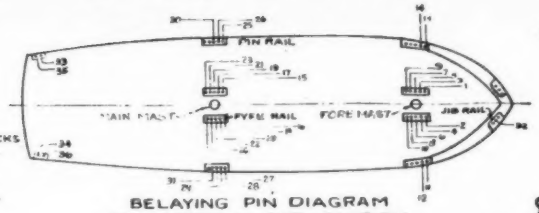
SCALE ⅛"=1'-0"

SHEET Nº 1 DRAWN BY CARL A.R. LUNDMANN

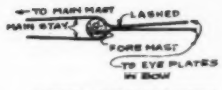


BILL OF MATERIAL

2	1¼" OLD STYLE ANCHORS	50	¼" BRASS BELAYING PINS	1	⅛" BRASS BELL	18	BRASS CARRONADES
1	BRASS DOLPHIN STRIKER	1	⅝" STEERING WHEEL	2	BRASS PEDESTALS	1	RUDDER
13	⅛" DOUBLE BLOCKS	40	⅛" SINGLE BLOCKS	60	⅛" DEADEYES	24	¾" DEADEYES
1	SHIPS BOAT	30	⅛" DEADEYE STROPS				

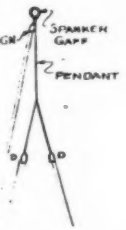


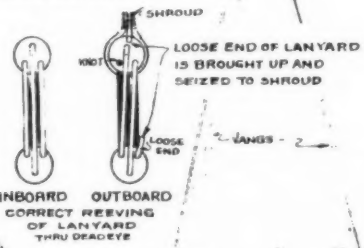
BELAYING PIN DIAGRAM
SEE ELEVATION FOR LOCATION

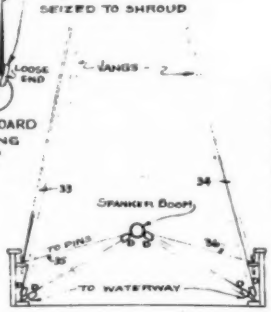


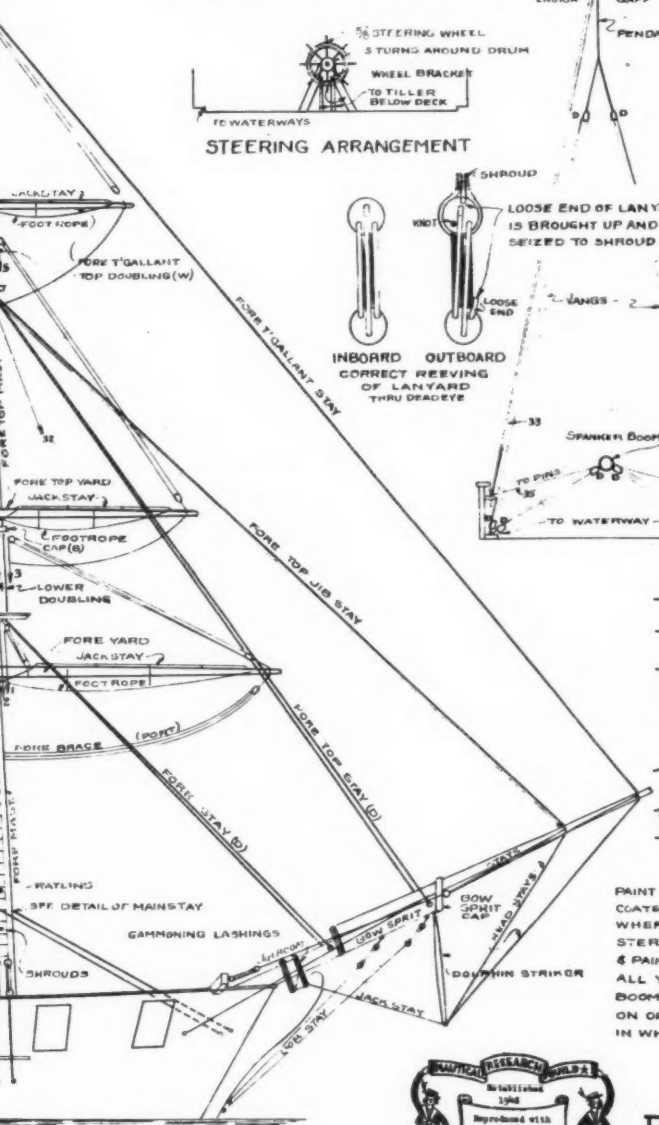
DETAIL OF MAIN STAY

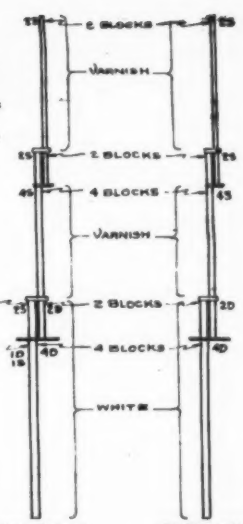
STEERING ARRANGEMENT









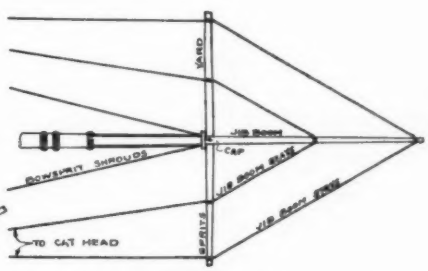


MAIN MAST FORE MAST

B BLACK W WHITE
S SINGLE D DOUBLE

№ 6	BLACK LINEN FISH LINE	(FOR STAYS)
№ 66	" " THREAD	(LOWER SHROUDS)
№ 86	" " "	(UPPER ")
№ 60	" " "	(RATLINS & LASHINGS)
№ 40	TAN SILK THREAD	(LOWER RIGGING)
№ 50	" " "	(UPPER ")
№ 24	IRON WIRE FOR JACK STAYS	
№ 36	COPPER " FOR PENDANTS	(PAINT BLACK)

NOTE:-
DO NOT USE COTTON THREAD ANYWHERE ON MODEL. IN REEVING RUNNING RIGGING THROUGH BLOCKS, AND LANYARDS THRU DEADEYES, WAX END OF THE LINE WITH BEESWAX OR SHOEMAKERS WAX.



PAINTING NOTES

PAINT HULL 2 COATS FLAT WHITE, SAND DOWN BETWEEN COATS THEN GIVE 2 COATS SEMI-GLOSS BLACK, EXCEPT WHERE NOTED. INSIDE OF BULWARKS WHITE, RAIL AND STERN BLACK. MAIN AND FORE MASTS VARNISHED & PAINTED WHITE AS PER DIAGRAM. ALL CAPS BLACK, ALL YARDS BLACK WITH ⅛" WHITE TIPS. GAFF AND BOOM BLACK WITH ¼" WHITE TIP. GOLD OAK LEAVES ON ORNAMENT ON SHIPS BOW. SHIPS NAME ON STERN IN WHITE LETTERS.

ADES

2 BRASS 12 POUNDERS
BRASS WINDLASS BARREL
50 JACK STAY EYE BOLTS

SHIPS RESEARCH GUILD
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BRIG "NIAGARA" 1812

LENGTH 110' BEAM 30'
SCALE ⅛"=1'-0"

SHEET №2 DRAWN BY CARL A.R. LINNEMANN

The "NIAGARA" was always classed as a brig but the addition of a trysail mast to the main made the 1913 vessel a snow. Another peculiarity was that the restored rig was supplied with bentinck shrouds. The topmast futtock shrouds were led to an iron ring; from this a single, heavier shroud was led to an eyebolt in the opposite waterway. This system was usually found in frigates or line-of-battle ships; brigs and sloops-of-war led the futtocks on each side to a single ring aft and a single shroud led down to a ring in the deck just aft of the mast.

By any standards of salt water warship building, the vessel was lightly sparred. We think this followed the ideas of the original builder. It was true that by 1813 good spar timber had become scarce on the seaboard and it had become necessary to fish and piece a great deal. This made for heavier masts and yards. The lake sailors still had available timbers and a yard that would bend without breaking was no disadvantage and was considerably easier to handle.

The "NIAGARA" was launched for the second time on June 7, 1913. Capt. Morrison and his aides, working in the unfamiliar mediums of a century past, accomplished their task in the amazing time of exactly two months. And to all outward appearances, the ship was complete. Sparred, riggod, armed, hammock nettings in place and sails bent to the yards, she began her triumphal tour of the lakes.

It was decided to take no risks with the old ships. Most of the trip she was under tow from the "WOLVERINE". From Buffalo to Chicago, all the larger towns on Lake Erie, Huron and Michigan saw her that summer. On Sept. 21, 1913 she returned to Erie. Cribbed up just out of the water, the ship slowly rotted through another quarter of a century.

In 1939, the citizens of Erie and the Pennsylvania Historical Commission determined to rebuild the old brig. Very little timber could be salvaged but a large part of the original keel was sound and again became part of the ship. The hull was rebuilt from Capt. Morrison's plans of 1913. After construction was begun, Howard I Chapelle and Capt. Stephen C. Rowan were commission d to prepare new plans. There were differences of opinion concerning the correctness of the lines of the almost completed hull and either this or a lack of funds halted the work when the planking was on. Some work has been done on the cabin arrangements in the hold and the deck is laid out but the rudder is to be hung, guns and deck furniture installed. There are no masts, spars or rigging but the sweep ports are in their proper positions.

We are grateful to Mr. Carl A. R. Linnemann for his gracious permission to publish his drawings of the Brig NIAGARA and to Mr. A. J. Fisher for his able assistance in providing the prints for reproduction in the JOURNAL. The full size plans are drawn to 1/8" scale and follow Captain Morrison's drawings very closely. It is believed they are the best available for model builders at this time.

Mr. Chapelle's lines for the "NIAGARA" are published in his "The History of the American Sailing Navy" but because of the small scale it is hard to determine where all of the points of difference occur. It appears that Mr. Chapelle gives the ship a flatter floor and a harder bilge. He mentions that the rake of the stem is doubtful and that the bow may be oversharp. Mr. Chapelle's publishers advise that the large scale lines are no longer available.

(Continued on Page 68)

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MYSTERY?

Does anyone know the present location of Culver's model of the SOVEREIGN OF THE SEAS (of 1637). This model alledgedly disappeared after it was removed from exhibition at the Museum of Science & Industry, New York City, around 1941. Please advise the Secretary if you have any leads as to the present location of the model.

THE JAMESTOWN FESTIVAL OF 1957

A full scale replica of the ship SUSAN CONSTANT, which brought the first permanent English settlers to America in 1607, is under construction in a West Norfolk shipyard and will be launched late in 1956. Contracts for full-size replicas of the historic vessels GODSPEED and DISCOVERY have also been awarded to Dunn's Marine Railway, Inc.

The three original vessels, built probably in the 16th century, consisted of the 100-ton flagship SUSAN CONSTANT, the 40-ton GODSPEED and the 20-ton pinnace DISCOERY. All three vessels sailed for the New World with over 100 colonists distributed among them. Landings were made at Cape Henry on April 26, but settlement at Jamestown Island was not accomplished until May 13, 1607. The replica vessels will be displayed off Jamestown during the Festival of 1957, the 350th anniversary of the founding of Jamestown. Visitors will be permitted to board the SUSAN CONSTANT with its antique cannon and rigging and inspect the cramped quarters in which the colonists made their five month voyage. However, the smaller size vessels will not be available for public inspection for reasons of public safety.

The 60-foot, 12x12 keel of the SUSAN CONSTANT was hewn from a 100 year old pine and the "keel laying" ceremony was completed March 17th with Admiral Jerauld Wright, USN, Supreme Allied Commander of naval forces in the Atlantic as guest of honor. Plans for the replica were drawn by Robert G.C.Fee of the Newport News Shipbuilding & Dry Dock Company and based on his own research efforts and those of the late Commander Griffith Baily Coale. Mr. Fee has constructed models of the SUSAN CONSTANT for the Mariners Museum and the Virginia Historical Society.

When completed, the SUSAN CONSTANT will measure about 75 feet from bow to stern and will have a beam of approximately 25 feet. The original vessel was evidently a merchantman and was armed against the possibility of attack by the Spanish. The stern post and 28-foot high, curved stem of the vessel, are already in place along with her frames.

"Lofting" the GODSPEED has already begun. Her contract price of $32,924 covers construction only and does not include cannon, anchors, sails and rigging. The 20-ton pinnace DISCOVERY will cost $23,231. unrigged. All vessels are to be delivered, fully rigged, next February.

The painting, by the late Commander Coale, hangs in the Old Senate Chamber of the Virginia State Capitol in Richmond and shows the three ships maneuvering off Jamestown Island for the Historic landing. It was commissioned by the Commonwealth of Virginia.

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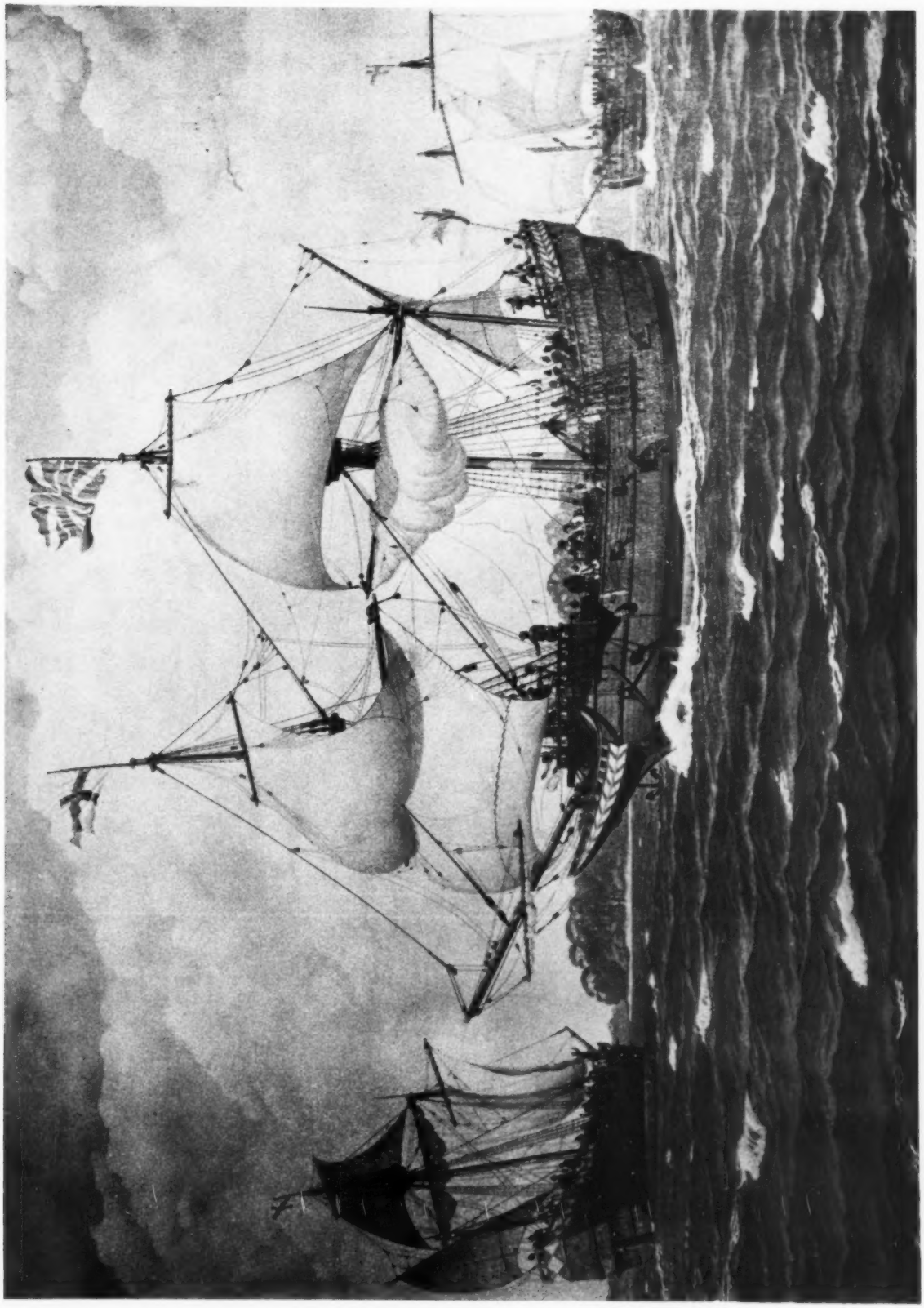
SPAR DIMENSIONS OF THE 1913 "NIAGARA" RECONSTR.	Masts-Booms			Yards		
	Length	Diameter	Head	Length	Diameter	Head
Fore	*45'	16"	14"	48'	9"	5 1/2"
Fore top	33'	9"	8"	30'	7"	5"
Fore topgalt	25'	5"	3 1/2"	20'	5"	3 1/2"
Main	*49'	16"	14"	50'	9"	5 1/2"
Main top	35'	9"	8"	31'	7"	5"
Main topgalt	25'	5"	3 1/2"	21'	5"	3 1/2"
Bowsprit	#29'	12"	-			
Jibboom	28'	7"	5"			
Spanker Boom	48'	8"	-			
Spanker Gaff	32'	6"	-			

*Length to deck. # To heel. Doubling on fore and main 9', topmasts 6'

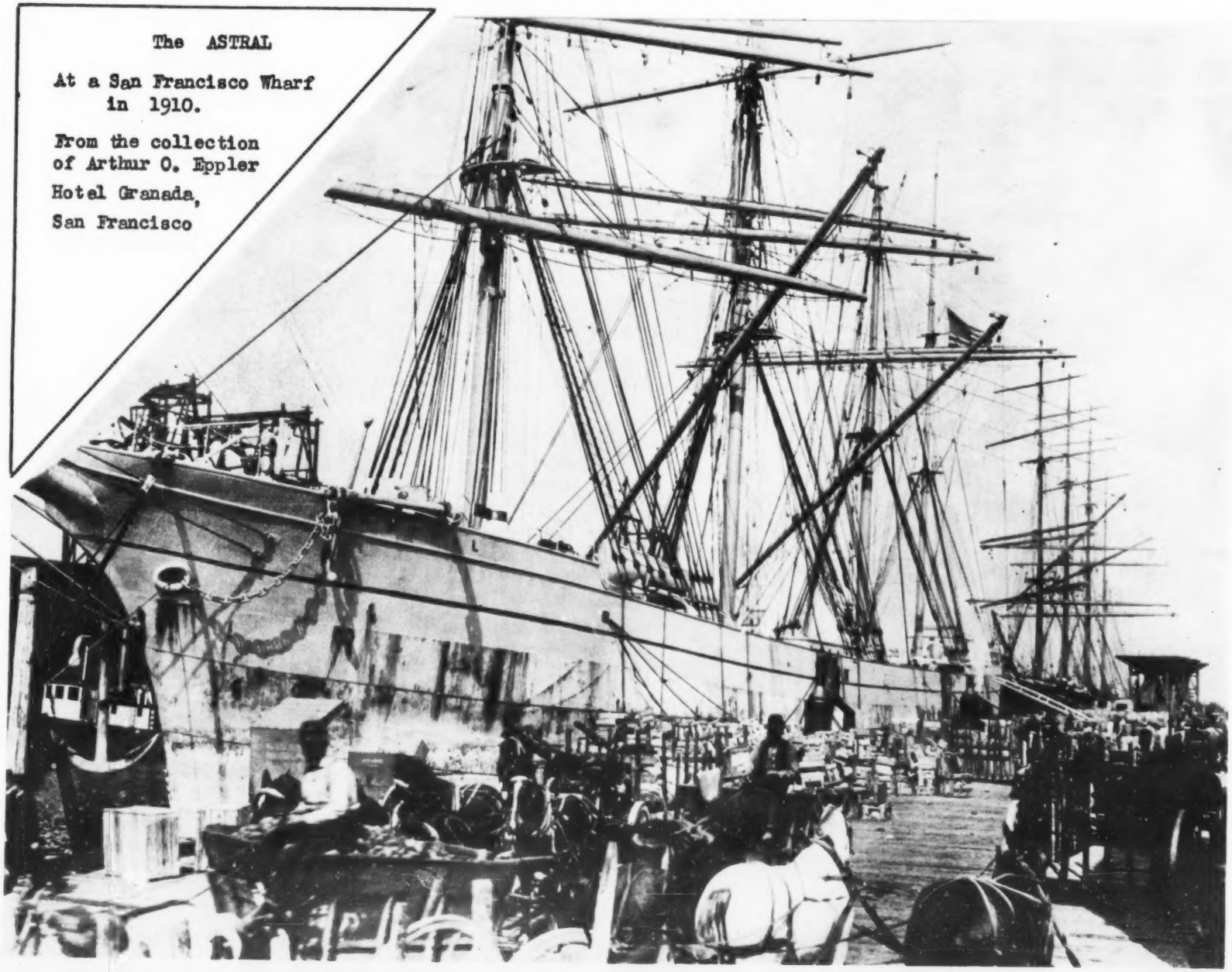


Painting by the late Commander Griffith Baily Coale showing the GODSPEED, SUSAN CONSTANT and DISCOVERY, left to right -- maneuvering for their historic landing off Jamestown, in 1607.

The ASTRAL

At a San Francisco Wharf
in 1910.

From the collection
of Arthur O. Eppler
Hotel Granada,
San Francisco



AMERICAN OIL SHIPS PART 2 - ASTRAL

By: Frank W. Thober

First of the three steel four masters built for the Standard Oil Company was the ASTRAL. Her life under their ownership was relatively uneventful - her passages were neither very fast nor very slow, and she managed to keep out of trouble except for an unfortunate tendency to lose her topgallant masts. One such incident sent her into port for repairs, the only time in her twenty one passages when she was forced to put in at any port other than her destination. During the entire ten years she sailed for Standard Oil she was commanded by Captain Jonathan W. Dunham of Salem, Mass., formerly master of the wooden ship PARAMITA.

Captain Dunham was not a driver - he was apparently content to let his ship jog along and not risk losing sails and spars to make fast passages. Her log shows that he made a practice of shortening sail as soon as the weather began to look threatening rather than waiting until it started to blow hard. When running the easting down while outward bound around the Cape of Good Hope, he rarely went more than a degree or two south of latitude 40 south. There were many occasions when the ASTRAL made day's runs of under 100 miles under lower topsails while strong favorable winds were blowing, and she was frequently hove to. She made a few day's runs of over 250 miles and only three of 300 or over have been found, two of them made when in light trim. About her best sailing performance was from February 14-20, 1906 while in the north Atlantic bound from New York for Yokkaichi. During these seven days she covered 1612 miles, her best run being 254 and her worst 210. This was good steady sailing, but not extraordinary.

Her work contrasts sharply with that of the ACME and ATLAS under Captain McKay. With him in command there was no shortening down or heaving to until he had to. He usually went as far as latitude 46 to 48 south in running his easting down. Day's runs of 250 to 300 miles or more were quite frequent, even when his ships were deep laden. Although McKay's passages were more spectacular, it is possible that the owners may have preferred Dunham's long series of uneventful, trouble-free passages to McKay's fast ones.

THE BUILDING OF THE ASTRAL

The principal dimensions and other particulars of the ASTRAL were as follows:

Type of vessel	Steel four mast bark
Length	332.3 ft
Beam	45.4 ft
Depth	26.0 ft
Gross tonnage	3,292
Net tonnage	2,987
Number of decks	2
Cargo capacity	5,000 tons
	135,000 cases of oil
Cost	$190,000
Official number	107,612
Signal letters	KQNB
Class	American Bureau of Shipping Class 1, 20 yrs.

She was built by Arthur Sewall & Co. at Bath, Maine. The superintendent of their yard at that time was Thomas Spence, who came to Sewall's in that capacity in 1898 after years of experience building iron and steel vessels in Scotland, the Philippine Islands and the U.S., and remained until the yard ceased operations in 1903. Others who had a part in the ASTRAL's construction were Joseph Dean, boss riveter, John A.Small, foreman machinist, Henry E. Preble, master joiner, Frank Gallagher, master carpenter, Leonard H. Gibson, master blacksmith, and Francis Deloche, rigger. Work was started on her in May, 1900, and she was launched December 8th, 1900. She was christened by Miss Fanny Ruprecht, of New York, daughter of Philip Ruprecht, general manager of the Standard Oil Company's fleet.

She left Bath on January 6th, 1901 in tow of the Standard Oil Company's Steamer MAVERICK and reached New York two days later to load case oil for her first trip to the Orient.

FIRST VOYAGE 1901-02

She sailed from New York on the morning of February 3rd, with a cargo of 131,636 cases of oil and 539 barrels of lubricating oil for Shanghai. At 3 o'clock that afternoon, shortly after casting off from the tug, she anchored near Sandy Hook Light Ship with her crew refusing to proceed, claiming that she was top heavy, cranky and not properly rigged. This was the first instance of crew trouble experienced by one of these ships, but not the last. One of the greatest problems of sailing ship operators in the twentieth century was that of adequate manning. Most sailors naturally preferred the shorter voyages, greater comfort and better pay of steamships, and sailing ships had to be satisfied with what the steamers could not use. Frequently this was very low in quality, and many a ship went to sea with hardly a competent seaman in her forecastle. Even good mates were hard to find. It speaks well for the ability of the masters of sailing ships that they were able to keep them going and bring them safely into port, considering the way the ships were manned. The Standard Oil captains were more fortunate than most: they had new ships, well built, with no stinting in their upkeep; their crews were well fed, and had, for their time, reasonably comfortable quarters. But they still had to put up with incompetents, loafers and worse among their crews and sometimes among the officers.

The ASTRAL was still at anchor off Sandy Hook on February 7th. That day she was boarded by officers from a revenue cutter who read the law to the crew. All turned to except three who were put aboard the cutter in irons. Her log does not mention replacements being received for these men, so she may have resumed her voyage short handed. At 2:30 P.M., February 8th, she got under way again and was off on her first passage under sail.

Three other oil ships had sailed for the East within a few days before - the German bark MABEL RICKMERS from Philadelphia for Hiogo and the American bark HELEN A. WYMAN from New York for Chefoo on February 2nd, and the British four mast ship COUNTY OF KINROSS from New York for Shanghai on the 5th.

The ASTRAL crossed the equator 24 days out from Sandy Hook and sighted Tristan da Cunha on March 25th. While crossing the Indian Ocean she developed a slight leak, and for the last two months of the passage two or three inches of water had to be pumped out of her bilges each day. On May 7th Christmas Island, 200 miles south of Java Head, was sighted 22 miles away on the starboard

beam. The next day she passed Java Head, then spent two days working her way through the treacherous waters of the Straits of Sunda, anchoring off Anjer on the evening of May 10th, 91 days from Sandy Hook. The MABEL RICKMERS arrived at Anjer the same day, 97 days from Philadelphia, while the HELEN A. WYMAN and COUNTY OF KINROSS did not arrive until later, 102 and 127 days out, respectively.

The next morning the ASTRAL got under way again, but her progress was very slow. It was near the turn of the monsoon, and the winds were light and variable. She spent a week creeping up along the coast of Sumatra and through Gaspar Straits, a week of swinging the yards around, tacking and wearing ship, to catch what little breeze there was. Several nights were spent at anchor because of the difficulty of navigation in those waters after dark. The light weather continued all through May, but on June 1st she got a moderate southwest breeze and covered 153 miles, the first day's run of over 100 since entering the Straits of Sunda.

From this time the weather was more favorable, and she made fair progress, averaging about 120 miles per day the last two weeks of the passage. During the evening of June 14th she was becalmed and anchored near Gutzlaff Island off the mouth of the Yangtze Kiang River. Early the next morning she got under way and headed toward the entrance to the river. On the morning of June 16th she was taken in tow and at 4 P.M. anchored off Woosung, 128 days from Sandy Hook. The other three ships all made longer runs - the MABEL RICKMERS was 136 days on the somewhat longer passage to Hiogo, the HELEN A. WYMAN was 144 days to Chefoo, while the COUNTY OF KINROSS did not arrive at Shanghai until after the ASTRAL had discharged her cargo and sailed, her time of 161 days being unusually slow for a vessel arriving during the southwest monsoon.

The ASTRAL remained at Woosung four days, discharging 18,600 cases of oil into lighters and the steamer MEIAN in order to lighten her enough to cross the Woosung bar. Then she was towed up to Shanghai and moored at the Eastern wharf where she discharged the rest of her cargo. On July 5th the cargo was all out and she went into dry dock to receive two coats of paint on her bottom. Two days later she was out of the dock and taking ballast on board. By July 17th she was ready for sea with 1514 tons of ballast in her hold, drawing 12' 1" forward and 12' 9" aft. On later ballast passages she carried only about 1100 tons; apparently Captain Dunham found that she could be handled with less ballast, and saved the cost of loading and discharging the extra 400 tons.

During her stay at Shanghai she had more trouble with her crew - men going off without permission and coming back drunk, refusing to work, threatening the officers, and various other incidents. This seems to have been a common occurrence for ships in port. At sea the men usually behaved reasonably well, probably through awareness that the safety of their own skins depended on their obeying orders and doing their jobs, especially in large ships with small crews like the ASTRAL. But in port they felt more independent and caused a lot of trouble.

She sailed from Shanghai for San Francisco on July 19th, sighted the islands off the south end of Kyushu, Japan, four days later, and from there steered a great circle course for her destination. On August 3rd and 4th she made 258 and 302 miles. On August 13th, R. Dole, an apprentice, died after being sick four days and was buried at sea. The ship anchored in San Francisco bay on August 30th, 43 days from Shanghai.

Her stay at San Francisco was rather long, and it was not until November 10th, 1901 that she got under way for New York in tow of the tug SEA KING. She had a full cargo, her mean draft being 23'2", trimmed six inches by the stern. Outside the Golden Gate she cast off from the tug and headed for Cape Horn. The run down the Pacific was made in good time. She passed Cape Horn on January 4th, 55 days out, under full sail after several days of light to moderate winds and smooth sea. Her first encounter with the famous Horn, in midsummer, was an easy one. After rounding the Horn she ran into a long spell of calms and head winds and took 43 days to the equator. At 9:30 in the morning of the day she crossed the equator, February 16th, she was struck by a heavy squall that carried away her fore topgallant mast five feet above the cap and broke the fore royal yard. All hands turned to and sent the wreckage down on deck. Work was immediately started on making repairs, and six days later she was rerigged and under all sail again. Late in the afternoon of March 12th, near Cape May, she was taken in tow by the tug SUMNER M. SMITH. The next afternoon she was off Sandy Hook in thick squally weather. As the tug was unable to handle her in the squalls, another tug, the UNIQUE, was engaged, and the two managed to get her in past Sandy Hook. At nine that evening she anchored off Staten Island, 123 days from San Francisco.

The only ship that beat her passage around that time was the speedy Scotch-built four master JOHN ENA, that left San Francisco a week before the ASTRAL and was only 105 days to New York. The WILLSCOTT was 124 days, HENRY B. HYDE 138, and SAINT JAMES 145; all were considered smart ships.

This was a very satisfactory maiden voyage for the new ship. While she was on her way her two sisters, ACME and ATLAS, had been launched. When the ASTRAL arrived at New York the ACME had been at Yokohama three weeks, having taken no less than 204 days to go out from New York, the longest unbroken passage made by any of the trio; and the new ATLAS was loading for her maiden passage.

SECOND VOYAGE 1902-03

The ASTRAL again went out to China with oil, this time to Hong Kong. She left New York May 17th, 1902 and made a rather slow run down the Atlantic. Her time to Tristan da Cunha was 60 days compared to 45 on her first passage. She had better luck with the wind the rest of the way and more than made up for the time lost in the early part of the passage. On August 1st when north of the Crozet Islands, she covered 300 miles, which seems to be the best she ever did while loaded. She was 97 days to Anjer and 118 to her destination where she arrived on September 12th. And again she made the shortest passage of any ship sailing about that time. The STATE OF MAINE was 123 days to Amoy, the CLARENCE S. BEMENT 221 to Yokohama, and the NAL, DAYLIGHT, LYNDHURST, MABEL RICKMERS and COUNTY OF LINLITHGOW had passages ranging from 133 to 157 days.

From Hong Kong she went down to Sourabaya in 41 days, then sailed from there for Philadelphia on December 19th. This time she made her first slow passage. She called at Saint Helena on April 19th, and anchored at Delaware Breakwater on June 5th, 168 days out. After discharging at Philadelphia, she was towed to New York to have three new topgallant masts fitted by E. Endner & Son of Brooklyn. No record has been found of how she lost these masts, but it probably occurred during the passage from Sourabaya, and may account, in part at least, for its length.

THIRD VOYAGE 1903-04

Early in August the ASTRAL towed to Baltimore to load for her first westward Cape Horn passage. Leaving Baltimore on August 25th, she towed down the bay and took her departure from Hampton Roads two days later. After an uneventful passage around the Horn, she arrived at San Francisco on January 18th, 1904, 144 days from Hampton Roads. This was a fair passage and seems even better when compared with those of the FOOHNG SUEY, that arrived at Honolulu the same day, 156 days from New York, and the BANGALORE, that left Hampton Roads four days before the ASTRAL and took 180 days to Los Angeles.

After discharging her cargo, the ASTRAL took in ballast and on February 26th towed out through the Golden Gate bound for Honolulu, but returned to her anchorage the same day because of a heavy gale. The next day she got under way again and this time kept going and arrived at Honolulu on March 23rd, after a light weather passage of 25 days.

Here she loaded her first sugar cargo and sailed for Philadelphia on April 23rd. She got off to a fairly good start, crossing the equator on the tenth day. But after running out of the southeast trades she had a long spell of southerly and southeasterly gales. During the night of June 16th while running before a gale under two lower topsails, she shipped a heavy sea on the poop that broke in the wheelhouse door and the skylight and flooded her cabins. Later the same day another sea smashed the skylight on her midship house. She was held up to the westward of Cape Horn by light east winds, then got a slant from the west and passed the Horn on the 67th day. Nothing of note occurred during the rest of the passage, and she reached Philadelphia on September 3rd, 133 days out. She might have done better had she had a good crew. But during almost the entire passage two or three men were off duty sick. Besides this, there was another seaman, Edward Benton, who caused frequent trouble by refusing to obey orders, attacking or threatening the officers, and seems to have been more of a handicap than a help in handling the ship.

This time her passage was beaten by all three of the ships that left the Hawaiian Islands about the same time. However this cannot be considered a disgrace, as she was beaten by three of the fastest sailing ships then under the American flag - KENILWORTH, 100 days; A. G. ROPES, 117 days; and S. P. HITCHCOCK, 123 days.

FOURTH VOYAGE 1904-05

After this excursion into the Cape Horn trade, the ASTRAL returned to carrying case oil on her next voyage. Laden with 129,000 cases and 700 barrels, she left Philadelphia on October 6th, 1904 bound for Hiogo. Leaving port in the fall, she would be approaching her destination at the most unfavorable time of the year, and could hardly expect to make a short passage. And she did not make one - it was not until March 30th that she finally reached port, 175 days out. This was the longest of all her passages, and it must have been a wearying one for her officers and crew. She was forty days to the equator, after a long spell of light southeast winds where the northeast trades should have been. Tristan da Cunha was sighted on December 4th, and she made pretty good time from there to the East Indies where she made her first landfall at Sandalwood Island on January 19th, 105 days out.

But the hardest part of the passage still lay ahead of her. She spent over a month threading her way up through the maze of islands in the Ombai Passage, the Banda Sea, the Molucca Sea, and into the Pacific Ocean, making good in that time only some 1200 miles against light variable northerly winds. The same kind of weather continued as she crept slowly northward past the Philippine Islands toward Japan. About the second week in March conditions improved a little, and for the next two weeks she averaged almost 100 miles a day. Then on March 22nd, when less than 200 miles from her destination, along came a northeast gale accompanied by a strong current setting to the eastward, and it was eight days more before she anchored off Kobe light on March 30th in the evening. All told she was 70 days making the last 3200 miles from Sandalwood Island to port. Her best days run in that time was 148 miles, and there were only eleven other days when she exceeded 100 miles.

ASTRAL's passage was one of the longest made to the Far East that year. The SUSQUEHANNA, which sailed from New York a couple of weeks earlier, was 180 days to Tsintau, but the A. G. ROBES was 150 and the S. P. HITCHCOCK 149 days to Hong Kong, while the German ships NIOBE and NAJADE were only 145 and 129 days, respectively, to Japan. The NAJADE, which arrived two days after the ASTRAL, made an exceptionally smart passage for a ship arriving during the northeast monsoon.

The ASTRAL discharged her cargo into lighters, finishing on April 18th, then lay at anchor at Hiogo until May 10th, with her crew employed chipping and painting the ship inside and out, and doing other similar work. Then she started loading ballast and by May 15th had 1100 tons in her hold. On the afternoon of May 18th she got under way and proceeded to sea under sail, bound for San Francisco. She almost made a smart passage this time, for on the thirtieth day she was about 250 miles south of the Golden Gate, having been forced to the southward by several days of northeasterly winds. But then she was becalmed for three days during which she drifted about 50 miles, but got no closer to where she was going. And when the wind started to blow again it came out of the NNW and she had to take a long tack to the west - as far as Latitude 131-31, 500 miles off shore - before she could steer a course for San Francisco. She finally anchored in San Francisco Bay On June 28th, 42 days from Hiogo. She sailed about 1200 miles to make good that last 250 miles.

After discharging her ballast, she was towed to Oakland where she loaded part of her cargo, then on July 16th back to Stewart Street, San Francisco, to complete loading for New York. Her cargo consisted of: 8575 barrels of wine, 24,381 cases of salmon, 360 tons of scrap iron, 1531 barrels of asphaltum, 88 barrels of oil, 36 loads of rails, 76 reel sides, 163 cases of cartridges, 153 cases of scrap tin, and 12 packages of bolts. Her mean draft was 22'6", somewhat lighter than usual when loaded.

She got under way on August 6th in tow of the tug VIGILANT, and at eight that evening cast off the tug and dropped the pilot and headed once more on the long road around Cape Horn. And a long one it was this passage. She had a light weather run down the Pacific and around the Horn. Up to this time the ASTRAL had had little trouble with Cape Horn, although at a later date she would have a taste of its full fury. On this occasion she was again held up by light east winds while west of the Horn, then passed Diego Ramirez on October 17th, 72 days out, under topgallant sails with a fresh northwest wind. The next day she covered 212 miles, the first day since leaving San Francisco she had topped 200.

On November 9th, in 24 south, she ran into a heavy gale from the north. At nine that evening while under lower topsails and a few fore and aft sails, two of her headsails burst. Three men were sent out to furl what was left of them. While they were out on the bowsprit she plunged into a sea and two of the men were swept away. In the darkness, with the gale howling and a heavy sea running, it was impossible to do anything to save them, and nothing more was seen or heard of them.

On December 12th she made the second best day's run of the passage, 200 miles. She sighted Diamond Shoals Light on December 29th and two days later anchored outside Sandy Hook. The next morning the tug J. NICHOLS towed her in to Stapleton, where she anchored to finish a long passage of 147 days.

FIFTH VOYAGE 1906-07

The ASTRAL received good despatch at New York, and within a little over a month of her arrival was ready for sea loaded with 132,030 cases of oil. On February 7th, 1906 she towed out past Sandy Hook bound for Yokkaichi, Japan. After a few days of head winds she got going and made a good run of 24 days to the equator. It was while running through the northeast trades that she covered 1612 miles in seven days, as previously mentioned. She continued to make good time, sighting Tristan da Cunha on the 45th day. But when she got down into the region where the wind is supposed to blow from the west, she found the "roaring forties" anything but roaring. Instead she had to struggle for three weeks against moderate east to southeast winds which held her up so she did not reach Anjer until May 13th, 100 days out. Then followed the usual days of striving to get to the northward through the light airs, calms and currents of the Java Sea and Gaspar Straits. During the evening of May 15th she grounded on Hancock Shoal, north of Billiton Island. An hour and a half later she slid off and anchored, apparently undamaged, to await daylight before going on. Once she was out into the South China Sea the weather improved, and she moved northeastward before the light but fairly steady southwest monsoon. On June 2nd she picked up six Filipinos who were adrift in a small boat. Nothing is said in the ASTRAL's log about how they got there. She anchored in Yokkaichi harbor at 8:30 P.M., June 16th, 134 days from New York. The only other sailing vessel going out to Japan about that time was the French bark MARECHAL DE CASTRIES, which was 146 days from New York to Hakodate.

When most of the cargo was out of the ASTRAL, her bottom was examined by a diver, who found no damage resulting from her grounding. After a short stay in port of only 20 days, she sailed for Honolulu in ballast on July 6th and arrived on August 6th after an uneventful 32 day passage. She lay at anchor at Honolulu for a month without even discharging her ballast, then sailed for San Francisco and arrived there on September 26th, 20 days out.

At San Francisco she loaded her last oil cargo, 133,205 cases, and sailed for Yokkaichi on November 16th. She crossed the Pacific in the northeast trades, having light to moderate winds most of the way, and anchored off Yokkaichi on January 15th, 1907, 59 days out.

She lay at Yokkaichi discharging cargo until February 4th, then took on 1100 tons of ballast. During much of the time she was in port, a gang of coolies was employed chipping and painting the outside of the hull. There was a lot of trouble with the crew - men refusing to work, turning up drunk, and deserting and being brought back by the police. On February 13th she weighed anchor and proceeded to sea under sail, bound for Honolulu. With fresh northwest winds to

push her along, the ship got off to a fine start, covering about 1000 miles in the first four days, sometimes logging as high as 13 knots. But at four o'clock in the morning of February 17th, while under lower topgallant sails in a strong breeze on the port quarter, and a heavy sea, she took a sudden lurch and shifted her ballast to starboard. Sail was quickly shortened and her course changed to bring her head into the sea. The crew went down into the hold to trim ballast, and by late afternoon had the ship back on an even keel and on her course. The rest of the way she had moderate to fresh winds and made steady progress, arriving off Diamond Head shortly before midnight on March 13th. She hove to until morning, then towed into the harbor and anchored.

By April 9th she was loaded with a sugar cargo for Philadelphia, drawing 22' 5" forward and 23' 1" aft. She was delayed a few days while water and stores were put on board and then by bad weather. So she did not sail until the 13th. She had a crew of 24 Japanese and Koreans, which caused a lot of criticism from the white seamen in Honolulu. Captain Dunham was accused of shipping these men in the hope that, being aliens, they would be deported when the ship reached the East Coast, and he would get a crew to sail his ship out to the East for nothing. Actually it was almost impossible to secure white seamen for ships bound around the Horn, as they preferred the better wages and easier work on coasting steamers.

The ASTRAL got off to a good start, holding a moderate easterly wind until May 2nd, by which time she had reached 20 south without encountering the customary equatorial calms. Then a few days of doldrums were followed by another long spell of east wind. On May 22nd, in 49 south, the wind hauled into the southwest and rose to gale force, continuing so for about three weeks except for two or three days of light weather. During this time the ship was under short canvas most of the time. She was not being driven hard, for her average day's run for this period was only about 170 miles, and she rarely logged over 9 knots. One day she made 250 miles; the next best was only 211. She passed about 100 miles south of Cape Horn on June 7th, 55 days out.

On June 15th, while running before a heavy gale, a seamen fell from the main upper topsail yard to the deck and was killed. He was buried at sea the next day. From the 20th to the 25th of June she encountered a violent northerly gale. During this time she was hove to or making futile efforts to get to the northward against the gale. Nothing of particular note occurred during the rest of the passage. On the morning of August 13th she sighted her sister ship EDWARD SEWALL, which had left Honolulu twelve days after the ASTRAL. Both ships towed in and anchored at Delaware Breakwater that afternoon, the ASTRAL 122 days out, and the SEWALL 110. Two days later the ASTRAL was towed up to Philadelphia and moored at pier 61 to discharge her sugar.

SIXTH VOYAGE 1907-08

When the cargo was out, she was drydocked, and then towed to Norfolk, where she arrived September 8th. A month to the day later, fully loaded with coal, she set sail for Honolulu. The EDWARD SEWALL started a similar passage the same day. Both got off to slow starts with head winds off Cape Henry and made long runs to the equator, 42 days for the ASTRAL and 46 for the SEWALL. Two days later, the ASTRAL lost her fore topgallant mast in a squall. A new one was sent aloft a few days later. The SEWALL also lost her fore topgallant mast in a pampero off the River Plate. The ASTRAL again had an easy time with the Horn, going around under full sail with a fresh northerly breeze, 72 days out. She was only ten days from 50 south in the Atlantic to 50 south in the Pacific. The EDWARD SEWALL had

more trouble off the Horn. She got around safely after something of a tussle with light head winds. But then she ran into a northwest gale and carried away the chain that held up her foreyard. The yard came down doing considerable damage aloft and on deck. It was twelve days before the weather moderated enough to allow her men to put the yard back in place.

The ASTRAL made a good run up the Pacific, arriving at Honolulu on February 10th, 125 days out. The EDWARD SEWALL did not get in until March 7th, 151 days from Cape Henry.

After discharging her coal, the ASTRAL crossed over to Hilo to load another cargo of sugar for Philadelphia. She sailed on April 6th. Within the next few weeks six other American square-riggers set out around the Horn for New York or Philadelphia. Of these seven vessels, five were Sewall built four masters; the other two were built on the Clyde. The following comparison of their passages may be of some interest:

SHIP	SAILED	ARRIVED	DAYS
ASTRAL	Hilo, April 6	Delaware Breakwater, Aug. 31	147
EDWARD SEWALL	Honolulu, April 6	Delaware Breakwater, Aug. 10	126
ATLAS	Kahului, April 9	Philadelphia, July 26	108
ACME	Astoria, April 20	New York, Aug. 9	111
JOHN ENA	Honolulu, May 8	Delaware Breakwater, Sept. 2	117
FOOHNG SUEY	Eleele, May 22	Delaware Breakwater, Sept. 28	129
DIRIGO	Honolulu, May 23	Delaware Breakwater, Sept. 28	128

The ASTRAL was a very bad last this time. Considering the longer distance sailed, the ACME's passage was the best. She was commanded by Captain McKay.

SEVENTH VOYAGE 1908-10

After discharging her sugar, the ASTRAL towed to Baltimore to load another coal cargo for San Francisco. On September 30th, 1908, she started down Chesapeake Bay in tow of the tug COLUMBIA. The next afternoon she cast off the tug outside Cape Henry, the wind being from the northwest and light. It soon shifted into the northeast and increased to a gale, driving the ship along for 183, 260, and 185 miles the next three days. But early in the morning of October 5th, the wind rose to hurricane force, and sail was shortened to three lower topsails. At six that morning, an even more violent blast of wind struck her and hove her down to her hatch combings, flooding her deck houses and cabins. Shortly afterwards her lower topsails were blown away, and she shipped a tremendous sea that swept away her port lifeboat. A little before noon the fore and main topgallant masts were blown out of her, and the mizzen topgallant soon followed them over the side. All the furled sails were blown out of their gaskets and torn to ribbons. For twelve hours she lay helpless on her side while the hurricane roared, huge seas washed clean over her, and her broken spars and gear, held by the remains of the rigging, smashed and banged against her side. Her crew could do little but hang on and wait for the weather to moderate. In the evening the wind dropped somewhat, but the sea continued very high. It was found that the cargo had shifted, and the ship had a list of about 25 degrees to port.

The next morning the damage was surveyed, and it was found that in addition to losing her topgallant masts and suffering much damage about the decks, she had

lost all her sails and most of her running rigging, but her hull appeared to be sound and she was not making any water. While the ship was kept heading southwest before the gradually falling wind, part of the crew started clearing up the wreckage on deck and aloft, and the rest went below to trim the cargo and right the ship. By the morning of October 8th, three days after the hurricane, they had some sail on her and were steering a course for New York. Progress was slow, as the winds were mostly light and variable with occasional squalls, and no sail could be carried above the topsails. By October 13th, the ship was on an even keel, temporary repairs had been made aloft, and the crew were reported by her log as "employed scrubbing ship", which she probably needed by that time. At 1 P.M., October 15th, she was taken in tow off Sea Girt, N. J. by the Standard Oil Company's towboat ASTRAL, and anchored in New York Harbor that evening. In spite of the terrific battering she had received from the hurricane, most of the damage was confined to her spars, sails, rigging, and deck gear; her hull suffered no serious damage and she did not leak.

After repairs had been completed, the ASTRAL sailed from New York on November 28th and arrived at San Francisco on May 6th, 1909 after a long run of 159 days. She encountered very bad weather off the Horn and was 45 days getting around. This was an unusually bad summer off Cape Horn. The nineteen ships that sailed from north Atlantic ports for California between the middle of September and the end of December averaged 155 days on the passage. The only good passage among them was JOHN ENA's 128 days from Norfolk to San Francisco.

After more than four months at San Francisco, the ASTRAL sailed for New York on September 18th. She was spoken in 27 north, about 900 miles from Sandy Hook, when 106 days out; but what might have been a smart passage was spoiled when she took sixteen days to complete the trip, arriving on January 18th, 1910, 122 days out. By this date there were few sailing vessels left in the intercoastal trade, and the ASTRAL's only companions were the old Down Easters HENRY FAILING and SEA KING returning to the East Coast to be cut down to barges after some years in the Pacific. Both made long passages, the FAILING 142 days, and the SEA KING 168 days from Tacoma. Ten foreign ships that sailed from the West Coast for Europe about this time made passages averaging 148 days, the best being that of the French four master EMILIE SIEGFRIED, 127 days from Astoria to Dublin. So it appears that the ASTRAL could more than hold her own with her contemporaries, even under the command of the unhurried Captain Dunham.

EIGHTH VOYAGE 1910

On April 15th, 1910, the ASTRAL towed out past Sandy Hook bound for San Francisco on her last passage as a Standard Oil ship. Three days later she was sold to the Alaska Packers Association, to be delivered to them after arrival in port.

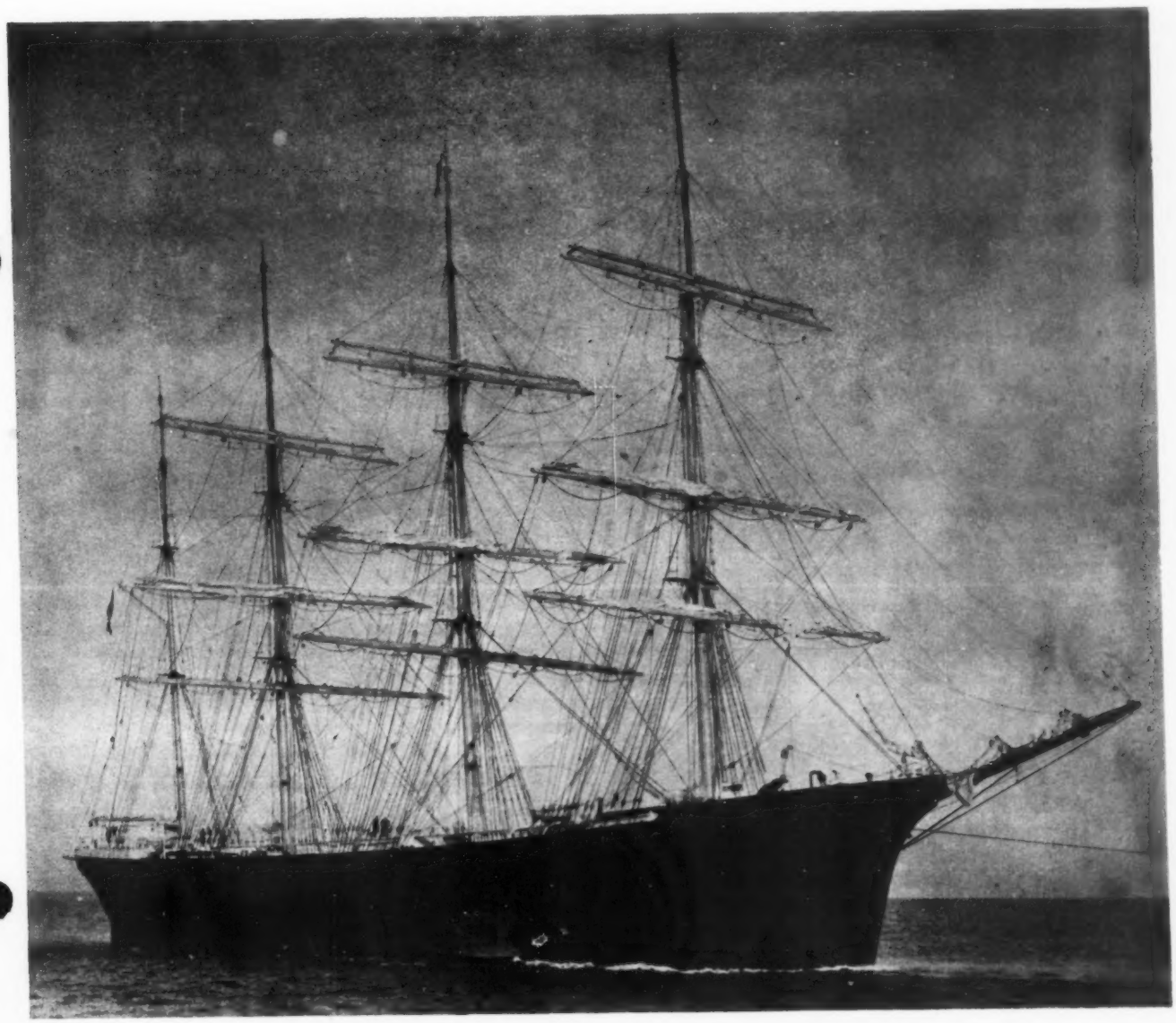
Cape Horn had been kind to the ASTRAL on her first few trips around; now it seemed determined to make up for it. After a hard struggle with head winds and gales, she got to the westward of the Horn. Then on July 7th, when in 55 south, 80 west, she ran into a terrifice NNW gale with mountainous seas. Her decks were flooded, and her topgallant masts carried away again. The rigging had to be cut away to keep the spars from damaging the side of the ship, and thus the masts and all their gear were lost. When the weather moderated, a new main topgallant mast was rigged. This was completed by August 4th. The fore and mizzen topgallant masts were not replaced at sea, probably due to the lack of enough spare spars. Continuing her passage, she reached San Francisco on September 16th, 154 days from

New York. This was another bad Cape Horn season, and few of the ships that made outward passages around that time managed to do it in under five months. The best were 136 days from Rotterdam to San Francisco by the British ship IRBY, and 139 from Philadelphia to Seattle by the ATLAS, which was also making her last passage for Standard Oil.

STAR OF ZEALAND

On November 18th, 1910, the ASTRAL was taken over by the Alaska Packers Association and renamed STAR OF ZEALAND. She was used by them in the salmon fishery until the late 1920s, being one of the last sailing vessels to remain active in this work. Then she was laid up for a few years at Alameda. In 1935 she was sold to a Japanese scrap metal company, loaded with 4500 tons of scrap iron, and on August 30th put to sea for the last time. She took 82 days to cross the Pacific to Yawata, Japan, and was then broken up.

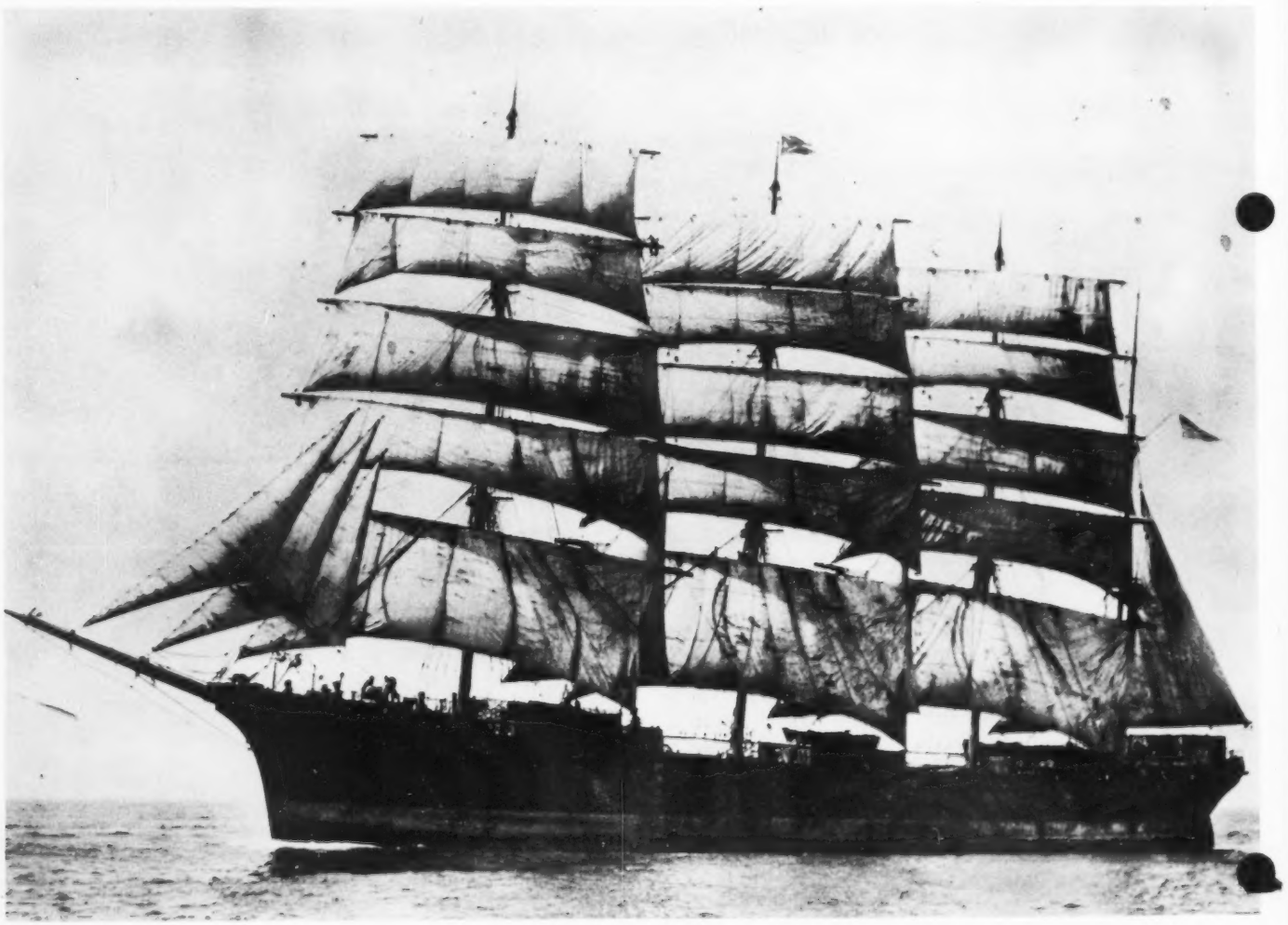
* * * * *



ASTRAL, in the Kennebec, shortly after she was completed.

A FURTHER NOTE ON SAILING ROUTES TO THE FAR EAST

In Part 1 of this article (Nautical Research Journal, vol. 8, no.1), two routes to Far Eastern ports were described: by way of the Straits of Sunda and the China Sea during the southwest monsoon, and south and east of Australia during the northeast monsoon. There was also another route sometimes followed when the monsoon was unfavorable. This was to pass east of Java and through Lombok, Alas, Ombai, or one of the other straits between the islands, then north through Makassar Straits of the Molucca Sea and east of the Philippine Islands. This was somewhat better than going through the Straits of Sunda and the South China Sea, but it still has its disadvantages. It required about a thousand miles of sailing through the East Indies, where the waters were full of reefs and rocks, many of them poorly charted and marked; and navigation was made even more hazardous by unpredictable currents and light variable winds. And even after the ship got clear of the islands, she still had a long way to go against unfavorable winds. The ASTRAL's experience on her fourth outward passage gives some idea of the difficulties encountered by sailing ships in these waters.



STAR OF ZEALAND ex ASTRAL after she was sold to the Alaska Packers Association and had her royals removed.

INTRODUCING NEW MEMBERS

FISKE, Jr., EDWIN W. - Sheldon Avenue, Tarrytown, New York. Mr. Fiske is a Master Mariner and is presently Manager of the Operating Division, Marine Transportation Dept. of the Socony Mobil Oil Co. Inc. of New York.

HAYES, Jr., EDWARD G. - 201 North Wells Street, Chicago, Illinois - is interested in ships and modelling. He was introduced by Mr. William C. Boucher of Seattle.

MARITEM MUSEUM "PRINS HENDRICK" - Burg. S'Jacobplein 8, Rotterdam, The Netherlands--Mr. S. Barendrecht is Librarian of the Museum and Mr. E.W. Petrejus is one of the Directors. We are indebted to these gentlemen for material and supporting illustrations used in past issues of the JOURNAL.

ROSHKIND, PAUL - 782 Ripley Street, Alexandria, Virginia - is a modelbuilder and interested in sailing craft of the 18th Century. He is a member of the Washington Ship Model Society.

RUSK, HENRY - 1250 Tenth Avenue, San Francisco 22, California - is a member of Pacific Marine Research and Peabody Marine Museum Associates. He is a modelbuilder and extends his interest to maritime history, art and design. The paintings of Mr. Rusk are familiar works of art to many of us, particularly those appearing in the works of Mr. H. I. Chapelle.

SACKSON, MURRAY, 190 Waverly Place, New York 14, New York -- advises he is a Mechanical Engineer and is interested in the history of marine transportation, the evolution of ship construction and propulsion and model building. Mr. Sackson is presently building a model of McKay's FLYING FISH.

SMITH, TOWNSEND J. - 20 Highland Avenue, Rumson, New Jersey - informs us he is a member of S.N.A.M.E. and the Ship Lore and Model Club (New York-New Jersey area).Mr. Smith, we understand, is a retired Naval Architect and has contributed some interesting material to Mr. Thober for inclusion in later articles on the Standard Oil sailing fleet.

SPANOS, JAMES A. - 30 A Westway North, Baltimore 21, Maryland - is a ship model builder interested in warships of the late 18th and early 19th Centuries. He is on the lookout for helpful suggestions as to the best methods of painting models so as not to lose the delicate details of construction. He was introduced to N.R.G. by Messrs. Orr of Mystic and Smalley of Alaska.

The STANFORD UNIVERSITY LIBRARIES, Serial Department, Stanford, California

UNDERHILL, Jr., ANDREW M. - 37 Bellport Lane, Bellport, Long Island, New York - is an enthusiastic yacht racing fan (Star Class) and modelbuilder. He is presently interested in sailing craft of the 19th Century, both American and foreign, whether fore and aft rig or square. The big four posters of the latter days of commercial sail are of particular interest.

Please add to your "Directory of Ship Model Societies" etc.:

SHIP LORE & MODEL CLUB -Secretary S. Milton Clark, 30 Carolin Road, Upper Montclair, N. J.

CHANGES OF ADDRESS

DYBVIK, HAROLD, 1903 East Wallace Street, York, Pennsylvania
FOOTE, KENNETH A., 5103 Brookview Drive, Washington (16), D.C.
FRICK, WILLIAM M., RD 3 Riversville Road, Greenwich, Connecticut
HAY, Midshipman CARL J., Maine Maritime Academy, Castine, Maine
HERBERT, WALTER C., 142 Cambridge Road, Alexandria, Virginia
PAINE, Mrs. CAROLA W., Bethel, Connecticut (October 15th)

(continued on page 87)

THE BOSTON HARBOR TUG "PETER B. BRADLEY"

By Professor Evers Burtner

Until several years ago, the Atlantic Works was an active business devoted to ship repair, boiler construction, engine building, and shipbuilding. Descriptions of some of their accomplishments have appeared in notable engineering journals during the past 100 years both at home and abroad.

When the firm was active, they advertised by publishing lithographs and bulletins of their work. The accompanying plate titled Tug PETER B. BRADLEY was one of these. This little vessel was successfully operated for many years. Perhaps the following abstract of letters received from George Eli Whitney, engineer and inventor now 93 years old, will serve to show the BRADLEY'S characteristics.

> "The Bradley Plate made port O.K. She docked about 11:30 A.M. and I have been looking her over for several hours. At the time I made one trip on her, I recall she was out attending the trial runs of some warships along the New England Coast from Portland to Provincetown about 1885. She was then 8 years old and I was 23."
>
> "Captain George Chase, her skipper, handled her and I recall how easy she did the job. She acted as though her length were 100' to 120' OA although she was less. The BRADLEY had a habit of going out for a tow when most of the boats stayed in due to the weather. I do recall that the BRADLEY was a "sweetheart" with all who ever handled her. She did a swell job at her trade, which at that time consisted of looking for incoming tows of ships, barks and brigs off Cape Cod. Captain Chase told me she made her cost every year he owned her and he kept her in fine condition for years. I recall they used to call the Captain "Square Rig Chase" because he always went out for square riggers. In those days, they were mostly in from long voyages from China or Australia and paid good prices for towing".
>
> "The BRADLEY was properly timbered up and it is no wonder she lasted a lifetime. Last I heard, she was laid up, apparently abandoned, in Chelsea; main deck under water at high tide, etc. Betts Brothers (salvage and wharf builders) resurrected her, put new decks in and had her running as usual in 1896."
>
> "One peculiarity about her I never forgot was the refusal of her single cylinder engine to center. I was answering bells on her one time and the Chief Engineer told me not to be afraid of her for the above reason. I asked him why she wouldn't center and he told me to try. I afterwards concluded that the heavy propeller provided inertia enough so it was hard to center her.The boiler furnished plenty of steam for the single cylinder (originally 20", later 22" diameter) engine".

The PETER B. BRADLEY was typical of many American tugs of her day' long deck house, aft towing bitt so far aft she would be hard to maneuver with tow line astern. The construction and arrangement plan is so complete and detailed that it should be clear to the model maker. Copies of some Atlantic Works plans are on file at Massachusetts Technology Department of Naval Architecture and Marine Engineering, including a half model of the BRADLEY.

Construction Notes

The sawn futtock type frames are clearly shown and pass between keel and keelson except at ends. Every alternate through deck beam is very massive and properly so since tugs are often subjected to severe athwartship forces. Our elders evidently knew how to enjoy themselves on shipboard as the plate shows a sofa in the deck house aft and awning stanchions in place both forward and aft.

STEAM TUG

PETER B. BRADLEY.

BUILT BY

ATLANTIC WORKS,

EAST BOSTON.

1877.

NAUTICAL RESEARCH GUILD
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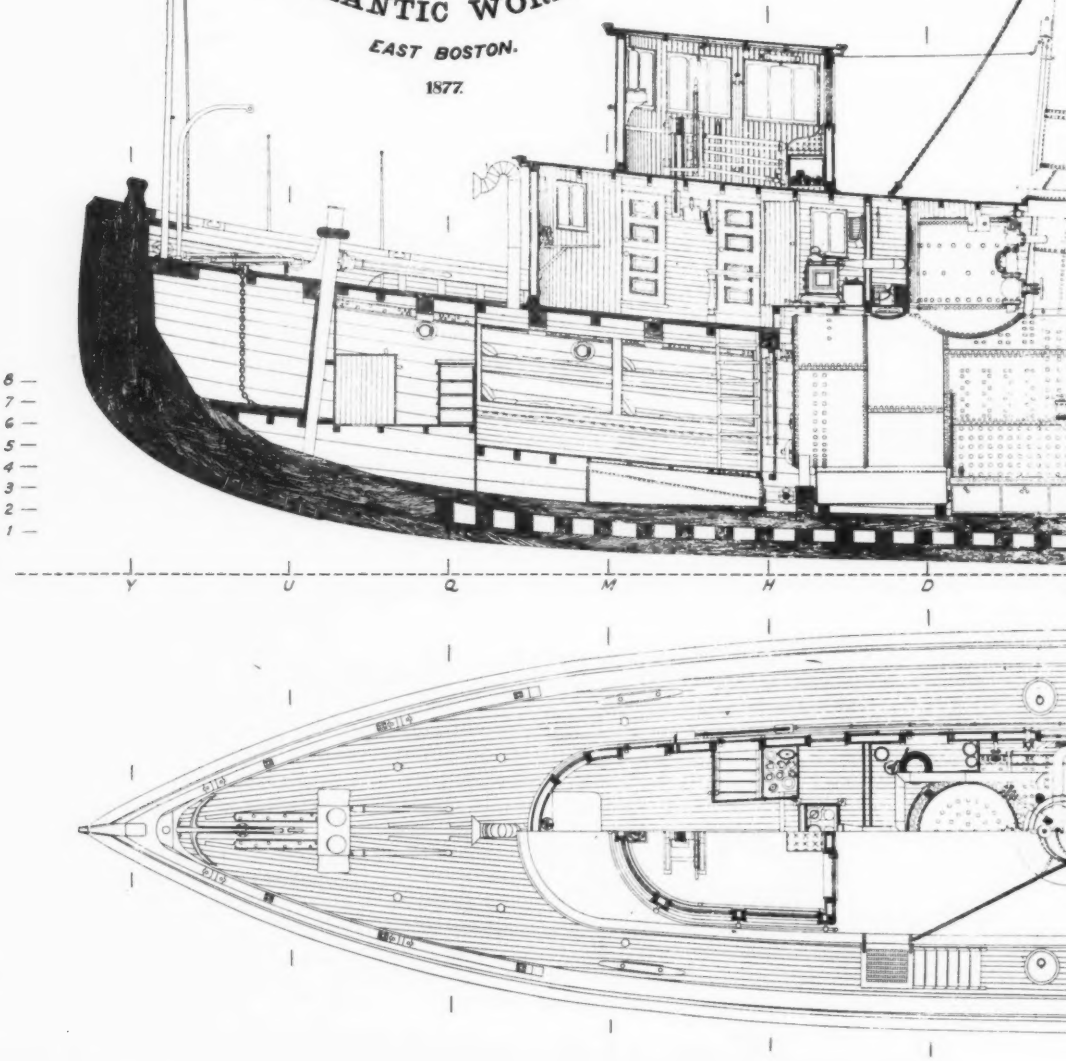

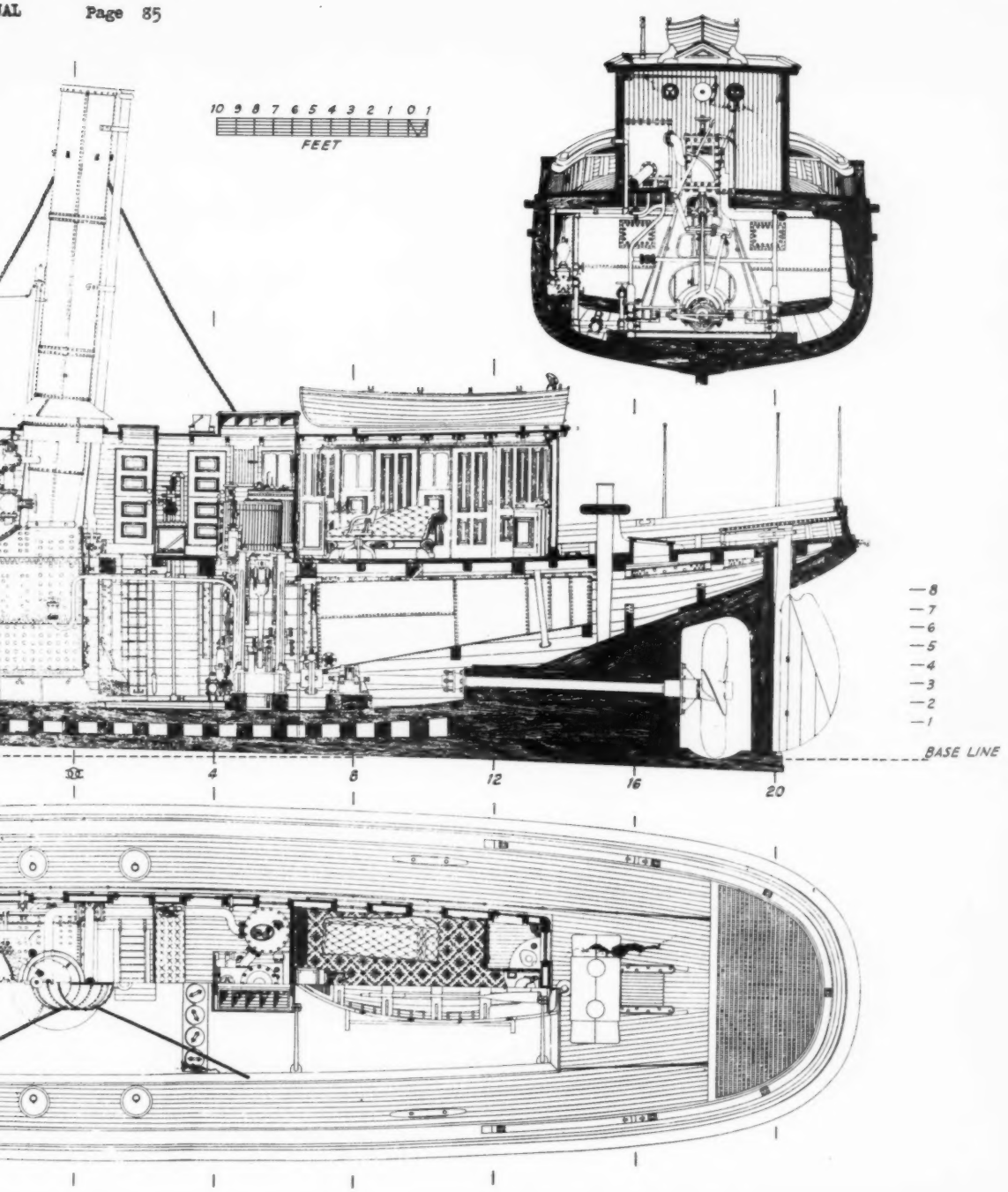
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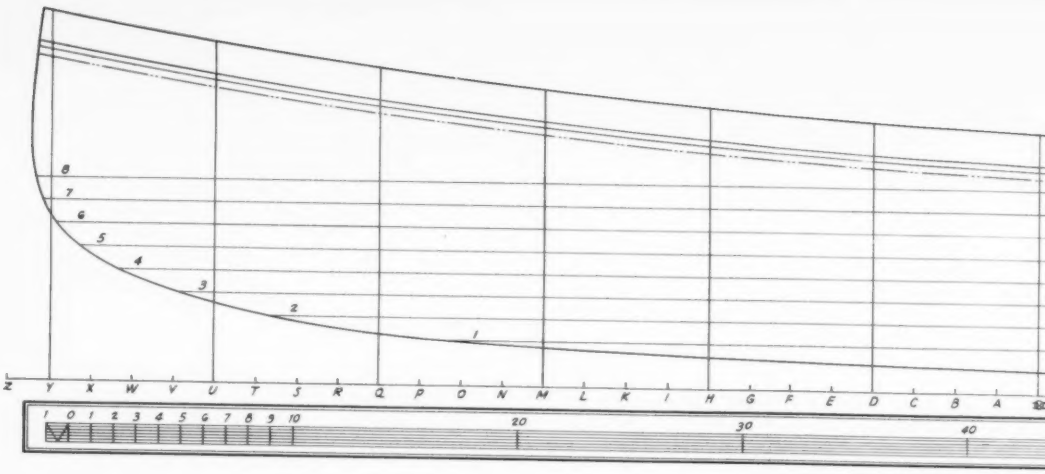
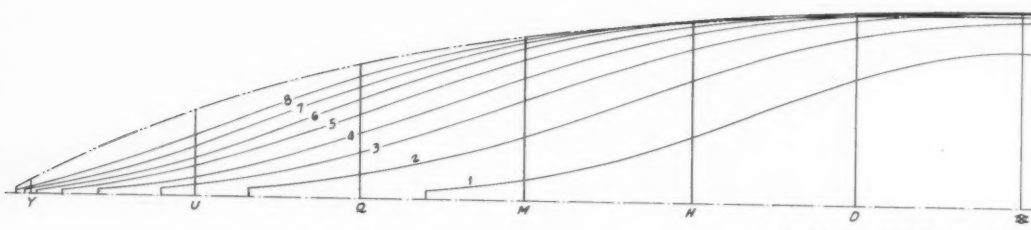
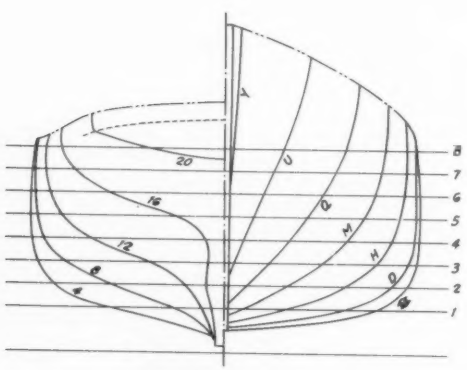


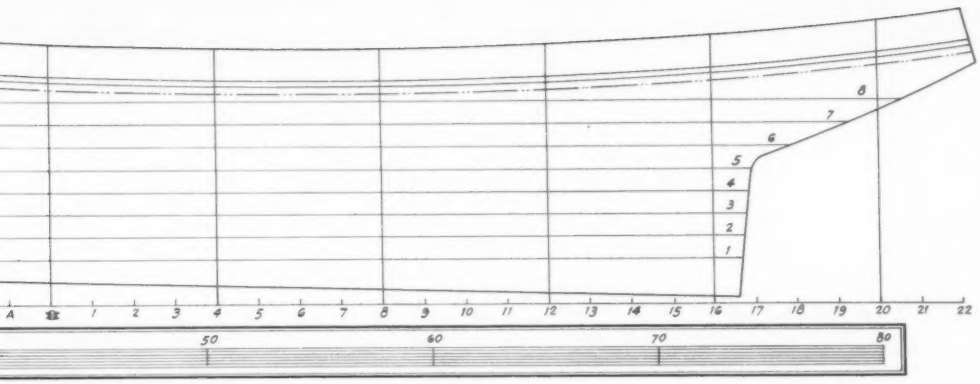
SHEER PLAN



HALF BREADTH



BODY PLAN



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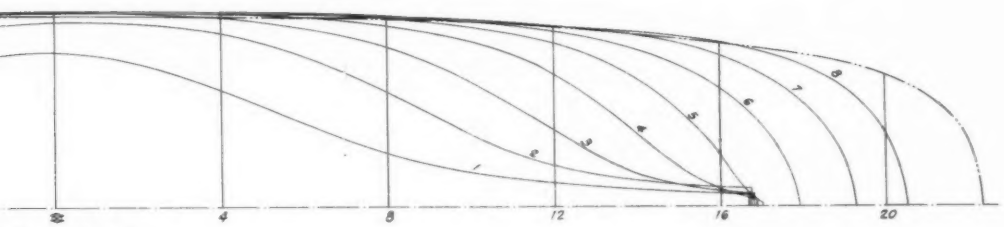

TH PLAN

LINES OF

THE STEAM TUG

PETER B. BRADLEY

REDRAWN FROM
THE ORIGINAL PLANS

Roy Rogers

The galley was located forward, as was common on tugs. Port and starboard coal bunker deck plates are shown, and on the port side there appears to be a stair-ladder leading to the top of the deck house and pilot house. This latter item is rather unusual and one wonders whether this wasn't replaced by a vertical ladder. The pilot house had a sufficient number of windows to provide the skipper with good vision.

The engine was a single cylinder type with Stephenson link motion and evidently had a riding cut-off valve. Engine cylinder lagging was covered with varnished oak or mahogany. The two attached pumps were driven off the main engine. The engine appears to be non-condensing as no condenser or pump large enough to class as an air pump is in evidence. The cylinder close to engine is undoubtedly an atmospheric feed water heater. After some service, the engine size - originally 18" diameter by 22" stroke - was changed to 20" diameter by 22" stroke.

The boiler of the BRADLEY was 7' in diameter by 14' long, weighing 25,600 lb. was also built by the Atlantic Works. It was a combined flue and tubular boiler comprising the following heating surfaces: furnace 93 sq.ft.; 21 1/2" diameter flues 67 sq.ft., back connection 74 sq.ft., 76-3 1/4" diameter 9-1/2' long tubes with 609 sq.ft., and front connections 41 sq.ft. for a total heating surface of 884 sq.ft. The grate surface was 31.6 sq.ft.

Historical Notes

Construction was started on the PETER B. BRADLEY, February 15, 1877 and finished June 15, 1877 at a cost of $14,600. The original owner (a) was the Bradley Fertilizer Company, of Weymouth, Massachusetts (now the Agricultural Chemical Company). She was kept in service by this firm until 1892 and then replaced by the ROBERT S. BRADLEY (an iron hull vessel built in Camden, Maine).

The P.B.B. was taken over by Captain Chase in 1892 and there appears to be no further record of a change of ownership. This vessel was listed as "Passenger", but for what reason is not known as she was never engaged in any other business except towing. The Custom House has no record of the tug after 1919. It has been learned since than that the PETER B. was burned on the south side of Spectacle Island in Boston Harbor.

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ACKNOWLEDGEMENTS: Captain Mortimer Nickerson, Secty. to State Pilots Commissioners of Boston; Mr. George H. Stebbins of Bethlehem Steel; the late Mr. Josiah P. Hayward, former Chief Engineer of Atlantic Works; and Mr. Roy Rogers - N.R.G. - who prepared the plans for publication.

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CHANGES OF ADDRESS (continued from Page 84)

RASER, OLIVER B. - Box 62, East Boothbay, Maine
SCHULZE, BERNHARD, Box 452, Port Ewen, New York
SPEAK, JOHN V. - 1133 South Cochran Avenue, Los Angeles 19, California
WILLIAMS, H. O. - c/o H. O. Williams Hobby House, Marathon, Florida

IN MEMORIUM

Mr. Daniel M. Henderson of Hampton, New Jersey - who passed away last November.
Mr. Carl Von Zielinsky of Washington, D.C. - who passed away last June (1955).

****

The Secretary will appreciate all prompt notifications of change of address. Every effort is made to keep the Roster current and correct. You can help by advising of any present error in listing.

LETTERS TO THE SECRETARY

From Ralph C. Shepherd, Lima, Peru -- The latest news of the three Peruvian barks is: MAIPO - This 3 masted bark was broken up at Callao last January (1956). She was built in 1893 as a ship by J. C. Tecklenborg of Geestmunde, Germany, for Rhederei Akt.Ges. of Hamburg. The MAIPO was one of the German vessels interned at Callao during the first World War and turned over to the Peruvians. In the late 1930's she was cut down to bark rig and her royal yards were also removed. When I last saw the vessel, she was in a sorry state due to neglect. It was impossible to see through her plates in places and the rigging was in a deplorable state. Her registered tonnage was 1770, net tonnage 1167, dimensions: 246 x 39.2 x 22.9 ft. Poop was 50 ft. and Foc'sle 28 ft.

TELLUS - When I last saw her in February, she had been stripped of much of her furnishings and was about to be scrapped. Like the MAIPO, the TELLUS was interned at Callao during W. W. I. She was built in 1891 as the EVERSTEN by Rijkee & Co. of Rotterdam for a Dutch firm. She was later purchased by Wachsmuth & Krogmann of Hamburg and renamed TELLUS. In 1928, her royals were taken down and masts shortened. In 1954, the ship was bought from the Cia. Administradora del Guano for use as a floating yacht club at Ancon (north of Callao) and renamed MALABOO. The venture seem to have proved a failure and the ship was sold for breaking up. Particulars are registered tonnage 1465, net tonnage 1363, dimensions 238.2 x 37.5 x 21.4 ft. Poop measured 43 ft. and Foc'sle 35 ft.

OMEGA - This iron 4 masted bark is still going strong and I do not believe she is up for sale at the moment. The ship was built in 1887 by Russell & Co. of Greenock for the Liverpool firm of Gillison & Chadwick as the DRUMCLIFF. During the 1890's, she was bought by Rhederei Akt. Ges of Hamburg and renamed OMEGA. Interned during W. W. I, she was one of the vessels handed over to Peru as reparations. Whilst under Peruvian ownership, the rig was reduced by removing the royal yards. Except for two voyages to Europe during the 1920's, the OMEGA kept in active service in the coastal guano trade in Peruvian waters. The ship was nearly lost in September 1951 while anchored off San Lorenzo. Apparently she was lying too near inshore, and loaded with guano, came to rest on her anchor. For a time it was touch and go as to whether the ship could be salvaged or not. The vessel was practically awash up to her main deck. Salvage operations were successful and although her present upper works and tophamper leave much to be desired, her plates are still in very good condition.

I hope this information will prove of interest to the members of N.R.G. and am trying to obtain further data of the OMEGA as she was in 1888 through an "old-timer" who served on her when she was the DRUMCLIFF. At that time she had no brace winches .....

From Fred Manning, Vancouver, Canada - The vanguard of British Columbia's whaling fleet, the only one in Canada, will sail out of Vancouver today (April 27th) on the first leg of a journey to whaling grounds off the northwest coast of Vancouver Island. Three steam whalers, each with 11 men aboard, will leave British Columbia Packers dock for headquarters in Quatsino Sound on the west coast of the island. Here, they will take on harpoons. Three deisel whalers will leave for Quatsino in two or three days as well. Whaling crews are hoping for good weather - which is necessary in order to sight the creatures - and a catch of 600 whales is hopefully anticipated.....

From H. W. Billings, Richmond, Virginia - My son and I are progressing well with the sailing model of the HENRY B. HYDE after a rather long "lay-off". We have made a "mock-up" model with all electronic controls for the yards and helm, and it works fine. It will operate at a distance of two miles from shore! The "mock-up" model is only for testing the operating actions of the radio controls and for locating and

studying the access to be arranged for in the final model. All access, as you know, must be water-tight. We hope later to complete plans covering the entire project - model and equipment - with some really good photographs of the model under sail. I thought that possibly an article covering the project would be of interest to you for the JOURNAL...

From Harry V. Dunn, Jr., Eutaw, Alabama - You are so right about this climate business being hard on models. Just recently, have watched my model brig that is planked on a solid hull from the wales up, undergo just about the maximum extremes of humidity. We have had some very dry weather followed by rather wet, cold weather. I have seen moisture condense and run down the inside of the glass case, but so far-there is no apparent damage. I think that if a model is made of well seasoned wood of the right species, there is very little damage from climate factors alone. Of course if anyone makes the error of using a wood like sweet gum for example, they can expect their model to split at the seams at almost any time. ----

From Harold A. Underhill, Scotland to Paul Brumbea, Youngstown, Ohio -- It is difficult to advise on the subject of bevelling frames, since so much depends upon the method used to set them out on the timber. In my own model work, I make drawings of both sides of the frame - on the same sheet of paper - and the difference between them is the bevel required. These two outlines are set off together on the timber, which is sawn out to the outer line and then bevelled to the inner. To be able to do this, it is necessary to draw on the "Lines Drawing" the thickness of the frames so that the shape of both sides can be obtained and transferred to the wood.- - - I have just written a book covering the plank-on-frame model from the "Drawing Office" stage to finished job, including full mast constructions and rigging details. I am now at work on the final illustrations and hope the book will reach the market later in the year.

From Hugh Gallagher, San Francisco, California - I read with interest the article about the case oil trade, and particularly in the mention of the JUTEOPOLIS as it brought back to mind the fact that she was the first sailing ship with which I had contact in my early business career. At that time I was working as a shipping "clark" in the Manila office of the Standard Oil Company of New York, and as I recall it, she arrived there in 1907 with a whole cargo of products consisting of cases of "Comet" oil and "Game Cock" oil, along with what we termed naptha (now known as gasoline), wax for making candles, and some small lamps for distribution among the local residents to interest them in lighting their establishments with coal oil lamps, thus promoting consumption of S.O. products.

The lamps were quite popular and demand for them was heavy. They were small and contained perhaps less than a pint of oil, but they were nicely made with good wicks and chimneys that had to be cleaned daily to remove the smoke.

The Master of the ship had encountered trouble with the crew on the way to the Philippines and they had insisted on being paid off in Manila. I helped with this payoff, which in those days was not performed before a shipping commission. It was necessary to recruit a new crew for the vessel, and after scurrying around, a full crew of filipinos was signed on and I believe this was the first full Filipino crew to serve on a sailing ship of this size. I heard later they performed well.-----

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BOOK OPPORTUNITY

Just before going to press, the Secretary was offered the exclusive opportunity of providing 100 members of the Nautical Research Guild with a pamphlet containing excerpts from the "Seaman's Vade-mecum and Defensive War by Sea" by William Mountaine. The booklet measure approximately 6-1/2" x 4" and consists of 48 pages (unbound, but stapled) of text, tables and several illustrations. It is a photo reproduction of the 1744 edition and contains all the material of importance to be found in the original issue relative to masting, rigging and arming of British merchant and Naval ships during the period 1720-1744. The modest cost of $1.00 per copy to N.R.G. members includes all handling and mailing costs. Fifty percent of any profit realized will be deposited to the account of the Nautical Research Guild. Address all orders to the Secretary-Treasurer.

The NAUTICAL RESEARCH JOURNAL is published by members of the NAUTICAL RESEARCH GUILD. Membership dues are $5.00 per annum and include all issues of the Journal published during the year, plus index of the current volume, plus copy of the latest Membership Roster. New members receive the numbers which have been previously issued in the current year.

Dues are payable January First of each year and are in force until receipt of the written resignation of the member. Opinions and assertions appearing in the Journal are the private ones of the writers. All rights are reserved and republication of material published should not be accomplished without the permission of the Secretary.

The NAUTICAL RESERACH GUILD is a non-profit and co-operative organization founded in 1948 by Harry D. Hamilton. All income of the Guild is used to defray publication and business expenses of the organization. No officer or member receives any monetary compensation for his contribution.

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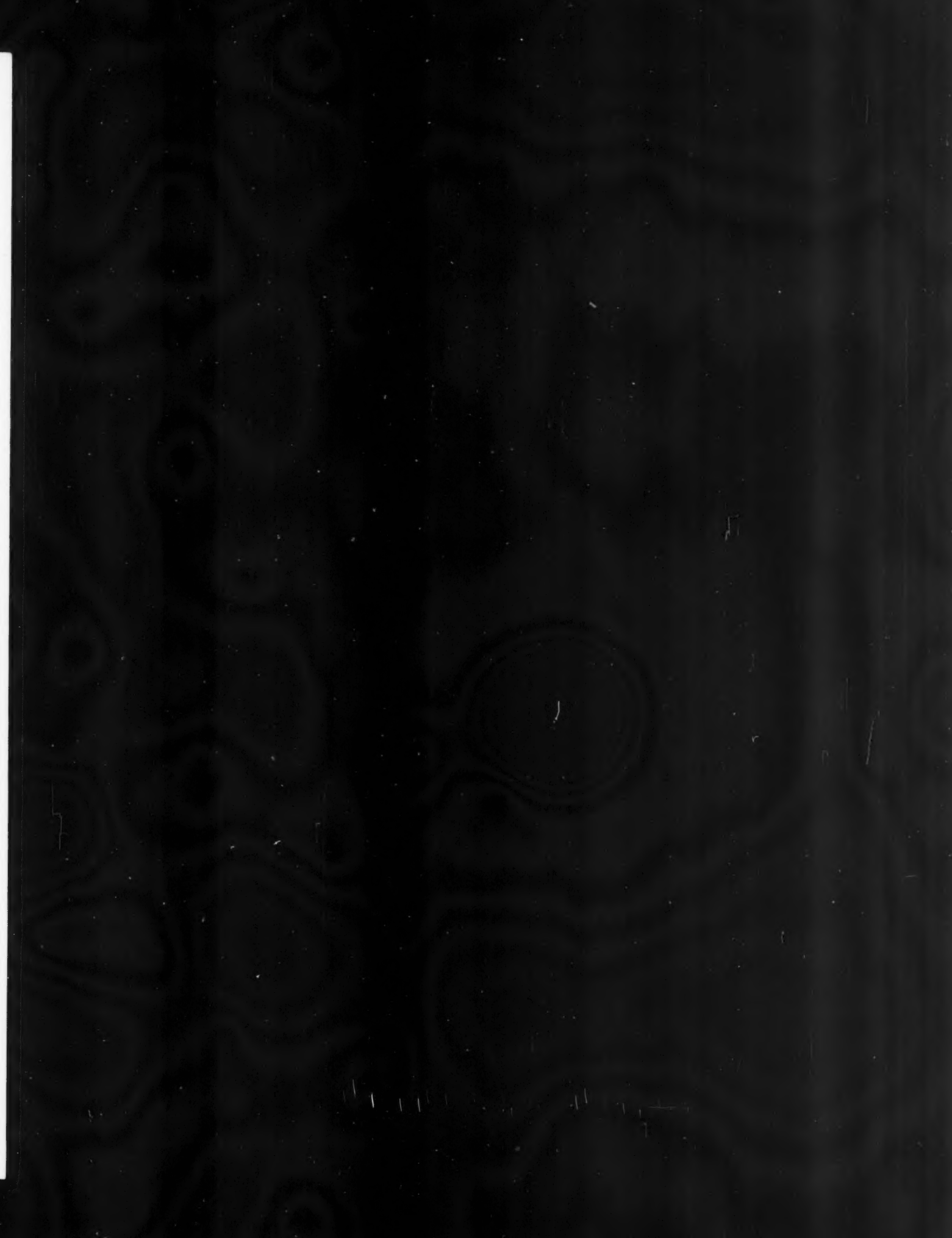
THE SECRETARY'S BI-MONTHLY REPORT TO MEMBERS OF THE NAUTICAL RESEARCH GUILD

Upon completing this third issue of Volume 8, it was thought that now would be as good a time as any to pause and reflect on what had been accomplished this year. It may not seem particularly noteworthy, but the first six months of the new year were extremely busy ones for the Secretary-Treasurer of the Guild. The demands of both offices for the available time of one person often results in a conflict of interest that is rather amusing.

First of all, the secretary must keep current with incoming correspondence - a very pleasant undertaking incidently - edit, publish and mail out the JOURNAL bi-monthly; and in what spare time that is left, consider ways and means of maintaining membership interest in the N.R.G. Those of you who may be statistically minded might be interested to note that during the past six months over 565 pieces of mail were received, more than 656 pieces prepared in response thereto and approximately 1050 JOURNALS assembled and mailed to members. Not a bad score, and when one considers an equal volume of mail between members - how can the Post Office Department report they are operating at a loss?

The duties of the treasurer, on the other hand, are mostly functional and consist of keeping the organization solvent and providing funds for stationery, postage, printing and other business expenses. This office includes the responsibility of reminding members of dues payable - a necessary but not welcome chore. It is fortunate that 80% or better of the N.R.G. membership take care of their share of the undertaking at the turn of the year and although the remaining members take a little longer to remember, they are amazingly loyal and contribute when the need is greatest.

There are other pleasant privileges connect with the joint offices of Secretary-Treasurer such as meeting regularly with N.R.G. members residing in the area and comparing notes, etc. Out of town members also show up from time to time and the mutual exchange of ideas, experiences and techniques cannot be adequately measured or expressed in words alone. Equally enjoyable and important is the daily flow of letters and articles that arrive from those of you who live too far away for personal contact. Again and again, the unselfish co-operation and eagerness to share with others the fruits of ones favorite research project has proved inspirational to your secretary, and there is only one conclusion possible which is, our organization is progressing, is worthwhile, and is continuing to grow in membership and scope.